



# SEA AND INLAND FISHERIES

## REPORT FOR 1973

AN ROINN TALMHAIOCHTA AGUS IASCAIGH  
(Department of Agriculture and Fisheries)

FO-ROINN IASCAIGH  
(Fisheries Division)

DUBLIN :

PUBLISHED BY THE STATIONERY OFFICE.

---

To be purchased from the  
GOVERNMENT PUBLICATIONS SALE OFFICE, G.P.O. ARCADE,  
DUBLIN 1.

or through any Bookseller.

(Pr. 4421)

---

Price: 22½p.



**SEA AND INLAND  
FISHERIES  
REPORT FOR  
1973**

**AN ROINN TALMHAIOCHTA AGUS IASCAIGH**  
(Department of Agriculture and Fisheries)  
**FO-ROINN IASCAIGH**  
(Fisheries Division)

**DUBLIN :**  
**PUBLISHED BY THE STATIONERY OFFICE.**

---

To be purchased from the  
**GOVERNMENT PUBLICATIONS SALE OFFICE, G.P.O. ARCADE,**  
**DUBLIN 1,**  
or through any Bookseller.

(Pri. 4421)

---

*Price: 22½p.*

**REPORT**  
 OF THE  
**MINISTER FOR AGRICULTURE AND FISHERIES**  
 ON THE  
**SEA AND INLAND FISHERIES**  
 FOR THE YEAR  
**1973**

---

Alphabetical List of Contents

**Part I. SEA FISHERIES.**

Paragraph title	Page
An Bord Iascaigh Mhara ... ..	10
Demersal Fishery ... ..	6
Engineering ... ..	16
European Economic Community ... ..	13
Exploratory Vessels ... ..	11
Exports ... ..	9
International and other Conferences ... ..	19
Legislation ... ..	21
Marine Works ... ..	12
Pelagic Fishery ... ..	6
Personnel and Vessels ... ..	9
Scientific Investigations ... ..	14
Sea Fisheries Protection ... ..	11
Shellfish ... ..	9
Technology ... ..	18
Training of Fishermen ... ..	10

**Part II. INLAND FISHERIES.**

	Page
Application of Electricity to Inland Fisheries	35
Arterial Drainage	31
Artificial Propagation	27
Eel Fishing Development	27
Electronic Fish Counters	33
Employment in the Industry	25
Engineering	31
Exports of Freshwater Fish	26
Fish Culture Installations	34
Foyle Fisheries Commission	38
Hydro Electric Installations	32
Inland Fisheries Commission	24
Inland Fisheries Trust Incorporated	38
Instruments of Capture	26
International and other Conferences	39
Investigation of Fish Movements	32
Legislation	41
Management of State Fisheries	39
Miscellaneous	37
Polluting Effluents	36
Regulation of Salmon Net Fishing	24
Salmon Research Trust of Ireland Incorporated	39
Scientific Investigations	28
Water Abstraction	37

## PART I.

## SEA FISHERIES.

In 1973 the total value of sea-fish landings reached a record figure of £7,463,803, exceeding that of 1972 by £2,147,360. The biggest increases occurred in the values of landings of demersal and pelagic fish. Demersal fish landings rose in value from £1,568,103 to £2,373,919 an increase of 51% and the value of pelagic landings at £3,316,532 represented an increase of £985,042 or 42%. The value of shellfish at £1,773,352 was £356,502 or 25% above that for 1972.

The weights and values of annual landings of sea fish (excluding shellfish) since 1964 are set out in the following table:—

TABLE 1

Year	Cwt.	£
1973	1,480,211	5,690,451
1972	1,489,891	3,899,593
1971	1,191,822	2,930,051
1970	1,325,129	2,809,393
1969	1,074,922	2,105,002
1968	836,156	1,668,751
1967	833,649	1,636,149
1966	626,316	1,454,175
1965	562,677	1,269,111
1964	487,871	1,084,442

Details of quantities and values of the different varieties of sea fish and shellfish landed in 1972 and 1973 are given in Appendix No. 1. The average price per cwt. obtained for each variety of sea fish (other than shellfish) from 1966 onwards is shown in Appendix No. 2.

The leading fishing ports in 1973 in order of value of fish landed were: Killybegs, Dunmore East, Galway/Aran Islands, Howth, Castletownbere, Skerries, Dingle, Clogherhead, Kilmore Quay, Burtonport and Fenit. As compared with the corresponding order of importance in 1972 there was no change in the first two places. Galway/Aran Islands moved into third place replacing Cobh in that position.

**DEMERSAL FISHERY.**—At 401,012 cwt. the total landings of demersal fish showed an increase of 63,996 cwt. or 19%. The most significant increases occurred in landings of cod which rose by 34,997 cwt. or 64% and whiting which rose by 52,574 cwt. or 67%. The latter was the species caught in greatest quantity and was followed by cod, haddock, plaice and ray/skate in that order.

The total value of the demersal fish catch increased by a record 51% from £1,568,103 in 1972 to £2,373,919 in 1973. Cod was first in terms of cash earnings followed by whiting, haddock and plaice. These four varieties contributed 75% of the total value of the demersal fish catch.

Increases in average prices were achieved in all varieties.

The overall average price of all demersal fish landed in 1973 was £5.92 per cwt. as compared with £4.65 per cwt. in 1972. This increase was largely due to the high prices obtained for varieties such as sole, haddock and whiting. On the other hand a significant decrease occurred in landings of haddock which dropped from 93,660 cwt. in 1972 to 76,220 cwt. in 1973. Decreases were recorded also in the landings of sole and pollack.

The weights, total value and average value of landings of demersal fish over the past ten years are shown in the following table:

TABLE 2

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	£
1973 ...	401,012	2,373,919	5.92
1972 ...	337,016	1,568,103	4.65
1971 ...	406,705	1,589,636	3.91
1970 ...	301,974	1,428,363	4.73
1969 ...	314,470	1,253,885	3.99
1968 ...	313,241	1,111,747	3.55
1967 ...	313,438	1,079,794	3.45
1966 ...	272,491	995,703	3.65
1965 ...	282,192	959,362	3.40
1964 ...	267,155	876,310	3.28

**PELAGIC FISHERY.**—The total pelagic catch of 1,079,199 cwt. was 73,676 cwt. or 6% less than the figure for 1972. The total value of the catch was £3,316,532 representing an increase of 42% on the 1972 figure of £2,331,490.

*Herrings.*—Landings of herring amounted to 764,822 cwt. valued at £2,802,165 compared with 941,840 cwt. valued at £2,116,157 in 1972.

The 1972/73 winter herring fishery off the South coast (Counties Wexford, Waterford, Cork) began in the week ending 4 November 1972 and ended on 17 February 1973. The total landings at the ports of Dunmore East and Cobh amounted to £382,554 cwt. This represents an increase of £103,282 on the figure for the 1971/72 season. Eighty-three boats, the same number as in 1971/72, took part in the fishery and landings were made on 80 days out of a possible 92. The introduction of a quota system which restricted catches for periods before and after Christmas undoubtedly contributed to the total catch being lower than it might have been. Landings from the fishery during January and February 1973 amounted to 152,730 cwt.

The landed value of all herrings auctioned at Dunmore East and Cobh amounted to £1,060,351, which was a record figure for the fishery. The demand throughout the season was exceptionally good, particularly during November and late January/February, when herrings were rather scarce.

The South-West coast Autumn fishery, exploited mainly by boats fishing into Castletownbere and Dingle, commenced early in August and continued until early November. Herrings seemed to be considerably scarcer than in the previous year but high prices more than compensated the fishermen for the decreased catches.

The 1973/74 winter herring fishery off the South coast began in the second week of November 1973. Seventy-three boats, ten less than in the previous season, took part in the fishery. In the interest of conservation of the stocks it had been agreed prior to the opening of the season that no fishing should take place on Sunday nights. This practice was maintained throughout the season. Landings during the period up to 31 December 1973 amounted to 103,863 cwt. as compared with 229,824 cwt. in the corresponding period of 1972.

The 1972/73 winter herring fishery off the North-West coast continued until late February 1973. A total of 254,968 cwt. valued at £578,629 was landed during this period. This represented an increase of 13% in quantity and 76% in value on the previous year. Landings were made at Killybegs and Burtonport.

The 1973/74 winter herring season off the North-West coast commenced in October 1973. Landings for the period October to 31 December 1973 amounted to 96,733 cwt. compared with 143,780 cwt. in the corresponding period of 1972. While there was a significant decrease in the landings, the value of the catch increased substantially and reached a record level of over £1m. This was due to a keen demand by local buyers who were supplying continental markets.

Although the main herring fishing off the North West coast was during the period October 1973 to February 1974, a considerable quantity of herrings was also landed during the period March-Septem-

ber 1973. Most of the herrings were landed in Killybegs and Burtonport with occasional landings at Kincasslagh, Teelin and Magheraroarty.

Herrings were landed also at Galway and Rossaveal. The major portion of the landings were made by boats using paired midwater trawls. Approximately twenty pairs from Dublin, Wexford, Waterford, Cork, Kerry, Donegal and Galway took part in the fishery and the biggest landings were made in February and March.

Following the pattern established in recent years the proportion of herring frozen (either whole or filleted) continued to increase while the amount exported direct to the continent in luggers decreased considerably. Because of the keen market demand no difficulty was experienced in the disposal of catch. Herrings were exported to many countries including Federal Republic of Germany, Netherlands, France, Norway, United Kingdom, Sweden, Poland and Denmark.

Exports of fresh, chilled or frozen herrings amounted to 368,500 cwt. valued at £2,678,000 as compared with 380,400 cwt. valued at £1,890,000 in 1972. The quantity exported in cured and marinated forms was 336,700 cwt. valued at £1,806,000 as compared with 351,600 cwt. valued at £1,509,000 in 1972.

The following table shows the total quantity and value and average value per cwt. of herrings landed in each of the past ten years.

TABLE 3

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	£
1973 ... ..	764,822	2,802,165	3.66
1972 ... ..	941,840	2,116,157	2.25
1971 ... ..	615,124	1,162,826	1.89
1970 ... ..	894,677	1,275,442	1.43
1969 ... ..	682,238	783,973	1.15
1968 ... ..	452,160	496,753	1.10
1967 ... ..	465,606	499,280	1.07
1966 ... ..	293,300	399,312	1.36
1965 ... ..	210,555	251,521	1.20
1964 ... ..	160,929	155,440	0.97

*Sprats*.—Landings of sprats increased from 115,046 cwt. in 1972 to 150,422 cwt. while the value of the catch increased by 103% from £65,333 in 1972 to £132,736 in 1973.

*Mackerel*.—Landings of mackerel amounted to 163,660 cwt. valued at £381,098 as compared with 90,389 cwt. valued at £146,920 in 1972. The average price was £2.33 per cwt. compared with £1.63 per cwt. in 1972

The chief landing centres for mackerel were: Killybegs, Castletownbere, Dingle, Valentia Harbour, Galway and Burtonport. Statistics of



mackerel landings over the past ten years are given in the following table:—

TABLE 4

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	£
1973 ... ..	163,660	381,098	2.33
1972 ... ..	90,389	146,920	1.63
1971 ... ..	61,126	117,764	1.93
1970 ... ..	20,683	39,641	1.92
1969 ... ..	31,801	45,352	1.43
1968 ... ..	42,590	48,526	1.14
1967 ... ..	44,196	51,163	1.16
1966 ... ..	29,645	46,389	1.57
1965 ... ..	40,213	45,853	1.14
1964 ... ..	26,308	38,891	1.48

**SHELLFISH.**—The value of the shellfish catch at £1,773,352 represented an increase of £356,502 over 1972. The principal increases were in Dublin Bay prawns (+£149,515), lobsters (+£132,702), periwinkles (+£95,236) and oysters (+£43,935).

Total landings of queen scallops (*Clamys opercularis*) to 31 December 1973 were valued at £22,800. Values of shellfish landings over the past ten years were:

TABLE 5.

Year	£
1973 ... ..	1,773,352
1972 ... ..	1,416,850
1971 ... ..	1,308,323
1970 ... ..	1,102,071
1969 ... ..	890,548
1968 ... ..	735,030
1967 ... ..	516,623
1966 ... ..	579,161
1965 ... ..	431,262
1964 ... ..	420,114

**EXPORTS.**—At £10,633,000 exports of fish and fishery products, including both sea fish and freshwater fish products (see Part II of this Report) established a new record. Exports of sea fish products at £8,502,000 exceeded those of 1972 by £2,630,000 or 45%. Details of the exports are given in Appendix No. 4.

**PERSONNEL AND VESSELS.**—The overall number of men engaged in sea fishing continued to increase in 1973. The number engaged full time rose from 2,174 in 1972 to 2,424 in 1973 while the number of part-time fishermen increased from 3,968 to 4,151. There was also

an increase in the number of boats engaged in fishing in 1973, the total being 2,347 compared with 2,265 in 1972. The number of motor fishing vessels over 25 gross tons which are responsible for most of the wet fish catch decreased from 302 in 1972 to 298 in 1973 and the number of motor vessels of 25 tons gross and under rose from 763 in 1972 to 828 in 1973.

Further details are given in Appendix No. 7.

**TRAINING OF FISHERMEN.**—The scheme for training boys as fishermen was continued in 1973. The period of training extended over twelve months of which five were spent at a shore course provided in temporary school premises at Moville, Co. Donegal, and for the remainder of the period practical fishing experience was acquired by the trainees aboard selected fishing vessels. A group of 29 boys commenced training under the scheme on 1 February 1973 and at the end of the year were completing the practical side of the course. A second group of 27 boys commenced their training at Moville on 1 September 1973 and the course was still in progress at the end of the year.

The temporary school premises in use at Moville is being replaced by a new training school for fishermen which has been designed for the purpose and work on the construction of this new school building at Greencastle, Co. Donegal, continued during the year and was well on the way to completion by the end of the year.

Ten fishermen were selected to participate in the shore course provided in co-operation with the Galway Vocational Education Committee towards equipping experienced fishermen to qualify as skippers and all of them were subsequently successful in obtaining Certificates of Competency under the Merchant Shipping Acts. Since its inception in 1958 the scheme has assisted 122 fishermen in obtaining certificates. An Bord Iascaigh Mhara continued in 1973 to provide port courses at selected centres and, as a result, Certificates of Competency under the Merchant Shipping Acts were awarded to a further 19 fishermen.

**AN BORD IASCAIGH MHARA.**—The Board received from the Fisheries Vote 1973 a grant of £1,250,000 in aid of current and capital development and administration. Repayable advances totalling £915,000 were also made to the Board from the Central Fund mainly for the provision of boats and gear.

During 1973 there was a substantial growth in the value of exports, of which approximately 80% went to EEC member countries. Increased sales of herring products to the Dutch, French, Norwegian and German markets accounted for a substantial part of this increase. Processed herring was exported to Poland for the first time. The Board's first export workshop which was held in Hamburg in March, 1973 provided an opportunity for Irish exporters to meet German importers with a view to expanding trade. An extension of this marketing aid to the main markets on the Continent is planned.

Improved methods of fishing were demonstrated by the Board in many areas, including pair seining for smaller vessels which was introduced to fishermen in Kilmore Quay, Dingle, Quilty, Carna, Porturlin, Killala, Burtonport and Greencastle. With the co-operation of skippers in Dun Laoghaire and Galway experimental work was carried out with a Scandinavian combination trawl resulting in increased catches of quality white fish and of industrial-type fish on the East coast. Study tours abroad included a tour of fishing ports in Denmark, Holland, England and a visit to a gear-testing facility at Boulogne in France. Arrangements were made for a special programme of courses in Hull for Irish skippers.

During the year the Decca Navigational Chain came into operation. This system, incorporating a master station at Oranmore, Co. Galway and three subsidiary stations at Dungloe, Co. Donegal, Dingle, Co. Kerry and Ardmore, Co. Waterford, gives exact positional information to the fleet over the fishing grounds off the West, North-West and South coasts.

During the year ended 31 March, 1973 the Board assisted Irish fishermen in acquiring 69 new and 4 second-hand boats and gave financial assistance to enable fishermen's co-operatives to extend their facilities.

**SEA FISHERIES PROTECTION.**—Protection of the exclusive fishery limits involving regular patrols by vessels of the Naval Service of the Department of Defence was maintained in 1973. Prosecutions were instituted against the skippers of nine foreign vessels who had been arrested for illegally entering and fishing inside our exclusive fishery limits. Convictions were secured in eight cases of which four were under appeal at the close of the year. In the conduct of these cases and in the enforcement of fishery protection measures generally, the co-operation of the Garda Síochána was readily available.

**EXPLORATORY VESSELS.**—During the year the Department's exploratory fishing vessel *Cú Feasa* continued on a reduced scale the programme of surveying the sea bed off the Irish coast with the object of identifying areas suitable for bottom trawling. Portion of the sea bed area off the North-West coast was investigated.

In addition the vessel was employed in research projects on small herring, whiting, cod, plaice and sole on the East, South and West coasts and a sub-aqua diving programme related to nephrops research off Castletownbere. As only one vessel was available for this research work, because of the loss of the second vessel in 1972 by reason of an outbreak of fire, the amount of research work carried out during the year was considerably less than that carried out in previous years.

A detailed examination and review of the operations of the research vessels on Departmental work from the time of commissioning up to the present was undertaken by the Inspector and Engineer in co-operation with the Biologists and Engineering staff who employ the

vessels for their work. As a result of this collaboration a comprehensive brief was prepared outlining in detail the Department's requirements in a new fisheries research vessel to replace the existing one. This new vessel must be capable of carrying out the very much expanded programme of work that the Department will have to undertake in future years in view of the increased responsibility it will bear for the investigation, monitoring and protection of the marine environment. Tenders will be sought from competent ship builders for the construction and supply of a vessel in accordance with this brief.

**MARINE WORKS.**—At Killybegs Fishery Harbour Centre good progress was made on the new landing pier and servicing quay. Plans for a further 240 foot extension, increasing the overall length to 870 feet, reached an advanced stage. The preparation of drawings and contract documents for an extension of 244 feet to the jetty at the Blackrock berthage was completed. Four mooring buoys to be laid in the outer harbour were purchased. Expenditure on development works during the year amounted to £193,000.

At Castletownbere Fishery Harbour Centre the bridge connecting Dinish Island with the mainland was completed. Roads on the island were laid out but not surfaced. Civil engineering works on Dinish Island relating to the construction of a new wharf, a boat lifting system (syncrolift) and a boat repair yard proceeded. Expenditure on development works during the year was £194,000.

In Dunmore East Harbour work on the syncrolift installation and boat repair yard was completed and work on the fabrication of the associated transfer carriage system proceeded. Expenditure on improvement works during the year amounted to £16,000.

Other fishery harbour improvement works were completed during the year at Port (Inver), Co. Donegal; Caladh Ó Dheas, Caladh Mor, Coolacloy, Furnais North, Roundstone and Seana Comh Mheas, Co. Galway; Brandon Creek, Countra, (light on pier), Cromane, Cuas-na-h-Eige, Dooneen, Kilmakilloge (Navigation Lights) and Moneycashen, Co. Kerry.

Works in progress at the end of the year included the improvement of landing facilities at Burtonport, Carrig an Eanaigh (Navigation Lights), Greencastle, Inishboffin, Moville and Portaleen, Co. Donegal; Rinroe, Co. Mayo; Cleggan, Corradan, Doleen and Furnace, Co. Galway; Kilkee and Seafield, Co. Clare; Dingle, The Glen, Ballinskelligs and Portmagee, Co. Kerry.

Arrangements were being made at the end of the year to have improvements carried out at Inisheer, Killeaney, Mace, Rossaveel, Co. Galway; Renard Point, Ballinrannig, Dunquin, Beltra, Knightstown, Reen (Ballinskelligs), Rossdohan, Cahirciveen, Co. Kerry and at Skerries, Co. Dublin.

Arrangements were also made for provision of navigation lights in the Arranmore/Burtonport sea area.

The Survey Team set up to make an appraisal of the landing facilities required to meet the present and expected needs of the fishing industry on the coast of county Waterford completed their task early in the year. Field work on the survey of the coasts of County Wexford was completed and arrangements were in hand to have similar surveys carried out on the coasts of Counties Wicklow, Dublin, Meath and Louth.

**EUROPEAN ECONOMIC COMMUNITY.**—The common organisation of the market for fish and fishery products came into operation on 1 February, 1973. As from that date quantitative restrictions, which applied to imports of fresh, chilled or frozen fish, were abolished except in the case of trout and carp but imports continued to be subject to customs duties. Disease controls, where applicable, were retained. In accordance with the Treaty of Accession, the duties on all fishery products between the new member States and the Six and between the new member States themselves (where duties existed) were reduced by 20% on 1 July 1973. The reduction in duties on imports into the Six from Ireland mainly benefitted shellfish, on some varieties of which the Common Customs Tariff is up to 25% ad valorem, and salmon—the products available for export in quantity during 1973. The corresponding reduction in the Irish rate of duty did not affect the domestic market.

Trade arrangements concluded by the Community with European Free Trade Association (E.F.T.A.) non-applicants gave limited concessions on fish imports into the Community.

As indicated in the 1972 Report, guide prices and withdrawal prices are fixed each year for certain varieties of fish, including seven of interest to Irish fishermen. Regulation 3395/73 of 11 December 1973 fixed the guide prices for the 1974 fishing season. The withdrawal prices for market intervention to apply during 1974 were fixed by Regulation 3562/73 of 21 December 1973. All the withdrawal prices which will apply in Ireland in 1974 showed satisfactory increases as compared with the 1973 prices, particularly in the case of whiting, herring and mackerel.

Withdrawal of fish from market (intervention) did not take place in this country in 1973 because no Producer Organisation had been established. Further steps were taken by the Department to encourage fishermen to form producer organisations in order to avail of the benefits of the common fisheries policy.

Accession compensatory amounts applied in 1973 only to plaice imported into and exported from Ireland. As the common guide price fixed for plaice in 1974 showed an increase of 15 per cent, a separate guide price would not be necessary for Irish plaice in that year. The compensatory amount system, therefore, ceased to apply to plaice with effect from 31 December 1973.

Preliminary discussions on proposals for the restructuring of the inshore and offshore fishing fleets of member States took place during

the year but definitive proposals had not been formulated by the EEC Commission by the end of 1973.

A draft Council regulation concerning conditions for granting national aids under the common structural policy for sea fishing was submitted by the Commission during the year and was still under consideration by a working group at the end of the year.

**SCIENTIFIC INVESTIGATIONS.**—Full details of the scientific investigations made in 1973 are given in *Sea Fisheries Bulletin* (No. 11) 1974. During the year ten *Fishery Leaflets* on marine topics were published together with three issues of *Irish Fisheries Investigations* Series B (Marine) the details of which are given on page 72.

Investigations into the herring stocks on various parts of the Irish coasts were continued during 1973 and advanced information on them was distributed to the trade in *Fishery Leaflets* Nos. 55 and 56. Regular estimations of the fat contents of herrings were made and in the usual way the results were conveyed to the trade. Young herrings landed for reduction to fish meal at Mornington were examined and the stocks of herrings exploited by boats from counties Louth and Dublin in the northern Irish Sea were investigated. Racial studies on the young herrings used for fish meal and those taken by *R.V. cá Feasa* were made with a view to determining to which adult stock they belonged. The young herring survey commenced in 1972 was continued, part being a joint survey with the Netherlands *R.V. Tridens*.

Some samples of sprats were examined from the East coast industrial fishery and from the South coast. Samples of fish landed for industrial purposes on the East coast were examined during the year to determine the proportion of white fish in the landings. Work on plaice was resumed towards the close of 1973 and investigations were initiated on the sole and cod stocks of selected areas of the Irish coasts. A short survey on whiting at ten standard Irish Sea stations was undertaken in October 1973 to provide information in connection with the work of the North East Atlantic Fisheries Commission.

Investigations on the lobster and lobster fisheries were continued during 1973. The annual trap census was continued and the results for the year 1973 were published in *Fishery Leaflet No. 57*. Studies on the storage requirements of crawfish were undertaken at the Dunmore East Field Station and large samples were examined from counties Wexford, Cork, Kerry, Clare and Donegal. Officers of the Department gave advice to the public in relation to the handling and storage of both lobsters and crawfish. A storage tank with recirculating sea water was designed under the direction of officers of the Department. Conditions in the tank were monitored during the year. Because of the pressure of other work investigations on crabs were temporarily discontinued. Reports on the development of the reproductive organs of lobsters and crawfish, conducted by holders of studentships in Fisheries Science, were completed during the year.

The investigations on Dublin Bay prawns (*Nephrops norvegicus*)

were continued with a port sampling programme based on Skerries, Co. Dublin. The by-catch in the fishery was also investigated. A small scale marking experiment was undertaken off the South-West coast aimed at providing information on the growth of *Nephrops* under natural conditions and a small scale laboratory experiment was undertaken to see if captive prawns with notches in their tails grew more slowly than those without.

Regular monitoring of the oyster spat fall in Tralee Bay was continued during the year and although the ambient temperatures were not high a very heavy spat fall was observed. Spat collector plates were set down in some areas to ascertain how the larvae are distributed from the oyster beds. As usual advice was given to the public on various aspects of oysters and their development.

Work was continued on mussel stocks and on areas which appear to have potential for development as mussel fisheries along the south coast of Ireland. Two reports were published as *Fishery Leaflets* Nos. 46 and 47.

Investigations were continued on scallops (*Pecten maximus*) and queens (*Clanys opercularis*) and a study of the distribution and size of scallops in the Irish Sea gave encouraging results.

A considerable amount of time was devoted to the study of oil pollution and advice was given to local and other authorities as to the best method of dealing with oil slicks etc. The incidence of heavy metals accumulated by mussels in a number of sensitive areas was recorded. In view of the designation of Cork Harbour as an area for industrial development a preliminary study of the conditions was made during the year with the aid of undergraduate students. The research programme on the fauna of the inner part of Bantry Bay was continued during the year.

Members of the scientific staff continue to give advice to the general public on a wide range of topics and as usual identify interesting species of fishes taken in Irish waters from time to time.

During 1973 interesting, rare or scarce species of fishes taken within the 100 fathom line were as follows:—

1. Six gilled shark (*Hexanchus griseus*);
2. Undulate ray (*Raja undulata*);\*
3. Painted ray (*Raja microcellata*);\*
4. White skate (*Raja alba*);\*
5. Allis shad (*Alosa alosa*);
6. Great silver smelt (*Argentina silas*);
7. Saury pike (*Scomberesox saurus*);
8. Torsk (*Brosme brosme*);\*

9. Greater fork-beard (*Phycis blennoides*); ✓
10. Moonfish or Opah (*Lampris guttatus*);
11. Stone-basse or Wreck fish (*Polyprius americanus*);\*
12. Comber (*Serranus cabrilla*);
13. Pilot fish (*Nauorates ductor*);
14. Ray's bream (*Brama brama*); ✓
15. Black Bream (*Spondyliosoma cantharus*); — ✓
16. Red band or red snake fish (*Cepola rubescens*); — ✓
17. Goldsinny (*Ctenolabrus rupestris*);
18. Greater weaver (*Trachinus draco*);
19. Oceanic Bonito (*Katsuwonus pelamis*);
20. Catfish (*Anarhichas lupus*);
21. Bluemouth (*Helicolenus dactylopterus*);
22. Sea snail (*Liparis liparis*);
23. Piper (*Trigla lyra*);
24. Streaked gurnard (*Trigloporus lastoviza*);
25. Pogge or armed bullhead (*Agonus cataphractus*);
26. Scald fish (*Arnoglossus imperialis*);
27. Solenette (*Buglossidium luteum*);
28. File or trigger-fish (*Balistes carolinensis*); ✓
29. Sunfish (*Mola mola*). ✓

Some specimens of these species, indicated by an asterisk, were taken on rod and line.

A revision of the *List of Irish fishes*, by A. E. J. Went and M. Kennedy published by the National Museum in 1969 was being undertaken at the close of 1973.

Two members of the Department's scientific staff continue to act as members of the Irish Specimen Fish Committee and they and other members of the staff identified, on behalf of the Committee, fish submitted as specimens. During the year a short account of the rare, scarce or interesting species of pikes taken on rod and line from Irish waters in the years 1958 to 1972, inclusive, was prepared for publication as an appendix to the report of the Irish Specimen Fish Committee for 1973.

## ENGINEERING

There were further substantial developments in the Programme of Marine Works. For details see page 12.

*Fishing Ports and Landing Places.*—In continuation of the arrangements made in previous years to appraise the existing landing facilities and to make recommendations for works required to meet the present and expected needs of the fishing industry, the Survey Teams appointed to inspect and make recommendations for the fishing ports and landing places in Co. Waterford and Co. Wexford completed this assignment and presented the report on Co. Waterford to the Minister for Agriculture and Fisheries. The preparation of the report on Co. Wexford was well in hands by the end of the year.

As in former years the teams engaged in these surveys acted under the Chairmanship of Mr. S. O. Mealláin, consultant to the Department, and comprised representatives of the Department of Agriculture and Fisheries, the Office of Public Works, Roinn na Gaeltachta (for Co. Waterford), An Bord Iascaigh Mhara, Bord Failte and the County Council of the particular county being investigated.

Work continued on the implementation of the recommendations made in previous years for various counties by survey teams. These recommendations were reviewed and brought up to date where necessary to take account of developments in fishing activity at the various centres since the recommendations were made.

Work continued on the provision of improved landing facilities at Burtonport, Co. Donegal and Killala, Co. Mayo and requests for further development works at these ports were investigated.

Work commenced on the provision of improved landing facilities at Seafeld, Co. Clare, Rossaveel, Co. Galway and Portmagee, Co. Kerry.

At Cromane, Co. Kerry, special arrangements were made to improve hauling grounds for salmon nets along the sea shore by the removal from the sea bed of many large boulders which heretofore have impeded salmon netting operations.

Work continued on the development of the major fishery harbour centres at Castletownbere and Killybegs where arrangements had been made to extend for a further 240 feet the new landing pier which was nearing completion.

*Marine Pollution.*—The Water Quality Monitoring Survey of Cork Harbour area was continued during the year in collaboration with Pfizer Chemical Corporation. Surveys were carried out at critical periods during neap tides and spring tides in the spring and in the autumn.

A similar type water quality survey of Killybegs Harbour area commenced in October and was conducted during the year on a monthly basis at times of neap tide and spring tide. On each occasion samples of water from six monitoring stations were taken and submitted for analysis to the State Laboratory. The intention is to establish a base line for a monitoring programme to be conducted hereafter on a yearly



basis to provide an early warning of any marked deterioration in water quality so as to provide ample time for remedial action. Similar arrangements will be made for all the major fishery harbour centres to monitor the water quality in each.

As in previous years discharges into tidal estuaries of large quantities of effluent from existing and planned installations were investigated. Recommendations were made in the fisheries interests.

### TECHNOLOGY

*Fish Quality Regulations.*—The Fish Quality Officers continued to supervise fish landings to ensure compliance with the Demersal Fish (Handling, Storage and Transport) Regulations, 1967, as amended by the Demersal Fish (Handling, Storage and Transport) Regulations, 1973.

The Demersal Fish (Handling, Storage and Transport) Regulations, 1973, which came into effect on 1 February 1973, brought into effect changes in the grading weights of certain species of marine fish to comply with EEC Regulations.

To familiarise the industry with the new grading regulations members of the engineering staff and the fish quality officers spent a period in Killybegs explaining the changes to the skippers of fishing vessels and demonstrating how the fish should be graded in accordance with the EEC Regulations.

Work continued on the sampling of various species of marine fish at Dublin Fish Market to determine the best means of implementing EEC grading regulations. The object was to isolate easily determinable parameters which would make the application of the scheme practicable.

*Fishery Products—Export Control.*—The control of the export of certain fishery products under licence in compliance with the Order made in November 1971 by the Parliamentary Secretary to the Minister for Agriculture and Fisheries under the Agricultural and Fishery Products (Regulation of Export) Act, 1947, operated satisfactorily during the year in respect of those products for which the Institute for Industrial Research and Standards had formulated standard specifications. Export licences were granted for those products for which applicants were licensed by the Institute to use its Standard Mark.

*Standard Specifications for Fishery Products.* — The Inspector and Engineer continued to act as Chairman of the Working Group comprising representatives of the Department of Agriculture and Fisheries, An Bord Iascaigh Mhara, the Institute for Industrial Research and Standards and members of the fish trade to advise the Institute for Industrial Research and Standards on the formulation of standards for fishery products.



*National Codex Alimentarius Committee.*—The Sub-Committee on Fish and Fishery Products continued to advise the National Codex Committee on Codex matters of importance to Ireland arising in the formulation of the international Codex standards for fish and fishery products. The Sub-Committee under the Chairmanship of the Inspector and Engineer, consisted of representatives of the Department of Agriculture and Fisheries, the Institute for Industrial Research and Standards, An Bord Iascaigh Mhara, the State Laboratory and the Confederation of Irish Industries.

*Electrified Nephrops Trawl.*—Work on the development of an electrified nephrops trawl during the year was held up due to preoccupation of the consultant engaged on this project with other matters requiring urgent attention.

### INTERNATIONAL AND OTHER CONFERENCES

a. *International Council for the Exploration of the Sea.*—The Department's Inspector of Fisheries and Scientific Adviser and the Inspector of Fisheries on the sea fisheries side took part in the annual meeting of the Council held in Lisbon from 29 September to 10 October 1973 and before the meeting they took part in a visit to the shellfish rearing areas around Vigo in the north-west of Spain. Representatives of this country took part in the discussions in the Shellfish and Benthos, Fisheries Improvement, Pelagic Fish (Northern), Demersal Fish (Northern), Statistics and Hydrography Committees. Four papers were contributed to the discussions, one each to the Demersal Fish (Northern) and the Hydrography Committees and two to the Shellfish and Benthos Committee. A history of the Council under the title *Seventy Years Agrowing* by the Department's Inspector and Scientific Adviser was published in 1973. During the year the Department's Inspector of Fisheries on the sea fisheries side continued as a Vice President and attended Bureau meetings of the Council in London in May and in Lisbon in September and October. He also acted as convenor and Chairman of the Working Party on Irish Sea Whiting at which one of the Assistant Inspectors of Fisheries was also present. A second Assistant Inspector of Fisheries took part in the meeting of the Celtic Sea Herring Working Group in February in Copenhagen.

One of the Assistant Inspectors of Fisheries was released on special leave without pay to take up a two-year appointment as Statistician to the Council.

b. *North-East Atlantic Fisheries Commission.*—This body was set up under the provision of the North-East Atlantic Fisheries Commission of London of 1959. In March a meeting of a Working Group set up by the Commission on Celtic Sea Herring was held in Dublin under the chairmanship of the Department's Inspector of Fisheries and Scientific Adviser to draw up a report on the needs for conservation of this herring stock. Apart from representatives of the Department, administrators and scientists were present from Belgium, France, Germany, the Netherlands and the United Kingdom. The Assistant Secretary in charge of fisheries and the Department's Inspector of Fisheries and

Scientific Adviser attended as the country's permanent representatives the annual meeting held in London in May, when the question, *inter alia*, of the Celtic Sea herring stock was discussed. Arrangements were then made for a Working Group on North Sea and Celtic Sea Herrings to be convened in London in October to prepare a report for a special meeting in December. The Department's Inspector of Fisheries and Scientific Adviser, in the absence of the President and First Vice President of the Commission, and in his capacity as Second Vice President, took the chair at the meeting at which the Assistant Secretary and one of the Assistant Inspectors of Fisheries represented this country. The officers of the Department accompanied by two Irish fishermen and a representative of An Bord Iascaigh Mhara took part in the Special Meeting of the Commission in December when it was agreed to allocate to Ireland 18,000 tons, out of a total of 32,000 tons of herring to be taken from the Celtic Sea in the year beginning 1 April, 1974.

Two officers of the Department attended co-ordinating meetings of EEC member States in connection with the activities of this Commission in April, May and November in Brussels and London.

*c. International symposium on the early life-history of fish.*—This symposium organised jointly by the International Association for Biological Oceanography, FAO, the International Council for the Exploration of the Sea, the International Commission for the North West Atlantic Fisheries and the Scientific Committee on Oceanographical Research was held in Oban, Scotland in May and it was attended by one of the Assistant Inspectors of Fisheries who has been involved in rearing *Nephrops norvegicus*, the Dublin Bay prawn, in recent years. The subjects discussed included population dynamics in early life, the effects of various sources of pollution including thermal and chemical sources, plankton sampling gear and early rearing of fish.

*d. Meetings dealing with Marine Pollution.*—An officer of the Department attended meetings of working groups in January and December 1973 in connection with the operation of the Oslo Convention which Ireland signed on 23 June 1972. The Oslo Convention aims at the control of the deleterious effects of dumping at sea by eliminating the dumping of the more toxic substances and limiting the in-puts of the less toxic. The Convention applies to the same area as the North East Atlantic Fisheries Commission. The London Convention of 1972 on dumping is similar in context to the Oslo Convention but global in area application.

Officers of the Department attended preparatory meetings in Paris in September and December 1973 in connection with the proposed Paris Convention for the Prevention of Marine Pollution from Land-Based Sources.

One of the Fisheries Engineers attended the Pollution Control Congress in London organised by the UK Department of the Environment and the Confederation of British Industries. He also attended a Sym-

posium on Marine Pollution organised by the Institute of Marine Engineers.

e. *Visits to Fisheries Research and other Marine Laboratories.*—During the year members of the staff of the Department made special visits to fisheries research and other marine laboratories outside Ireland. The laboratories visited included the Burnham-on-Crouch Laboratory of the British Ministry of Agriculture, Fisheries and Food, the Dunstaffnage (Oban) Marine Laboratory of the Scottish Marine Biological Association and the Plymouth Laboratory of the Marine Biological Association of the United Kingdom.

f. *UN Committee on the Peaceful Uses of the Sea Bed and the Ocean Floor beyond the Limits of National Jurisdiction.*—Mr. S. O Mealláin, consultant to the Department, represented the Department at meetings of this body held in New York in March and April and in Geneva in July and August. This committee has been charged with the necessary preparations for the UN Conference on the Law of the Sea to be held in 1974. The Inspector and Engineer and the Department's Consultants participated in the preparation for the Conference as members of a Preparatory Working Group which has been set up by the Department of Foreign Affairs.

g. *Codex Alimentarius Committee on Fish and Fishery Products.*—Department's Inspector and Engineer attended as a delegate at the annual meeting of the Committee of Fish and Fishery Products of the Codex Alimentarius Commission which was held at Bergen, Norway, in October in connection with the preparation of draft international standards for various fishery products.

h. *National Committee for Geodesy and Geophysics.*—The Inspector and Engineer continued to act as the Departmental representative on this committee.

**LEGISLATION.**—Particulars of Statutory Instruments relating to Sea Fisheries made during the year are included in Appendix No. 22.

## PART II.

## INLAND FISHERIES

Details of the catches of salmon, sea trout and eels in the various Fishery Districts during 1973 are given in Appendices Nos. 11 to 17 to this Report. As usual the catches made in the Foyle Fisheries Commission area, formerly the Moville Fishery District, are not included but they are referred to in a separate section of this Report.

In 1973 the catch of salmon and grilse amounted to 538,330 fish weighing 3,995,193 lb. and valued at £2,297,236, compared with 499,068 fish weighing 3,690,111 lb. and valued at £2,140,266 for 1972. The overall average weight at 7.42 lb. was almost exactly the same as in 1972. The grilse component of the catches was again of relatively high average weight.

Weather conditions for the fifth year running during the main runs of grilse tended to favour netting in 1973 and angling was adversely affected in some areas by low water at times when fish might have been expected to run but despite this catches amounted to 25,424 fish weighing 206,408 lb. valued at £118,700, or slightly in excess of the figures for 1972 when 23,748 fish weighing 187,739 lb. and valued at £108,889, were caught.

The salmon catch figures for nets and rods for the years 1971, 1972 and 1973 are given in Appendix No. 12. In the year 1973 the salmon and grilse catch (by weight) was distributed as follows:—

Drift nets	...	65.7%
Draft nets	...	22.8%
Stake nets, snap nets, weirs and other commercial methods	...	6.3%
Rod and Line	...	5.2%

The proportion of fish taken by drift nets showed a slight increase in 1973 on that of the previous year.

The total number of licences of all kinds for angling for salmon and sea trout was 11,788 compared with 9,727 for the previous year. The average catch per licence in 1973 was 2.15 fish weighing 17.5 lb. and valued at £10 compared with 2.44 fish weighing 19.3 lb. and valued at £11.19 for 1972. The average weight of rod-caught fish was 8.1 lb., compared with 7.9 lb. in 1972. The highest average weight (10.7) for rod-caught fish was, as has been the case for a number of years past, obtained in the Drogheda Fishery District. In this District the rod catch is largely made up of fish which have spent two or more years feeding in the sea, rather than of grilse which have spent less than two years in the sea. On the other hand in most western districts the aver-

age weight of rod-caught fish was low because the catch consists almost entirely of grilse.

During 1973 the runs of small spring fish (two years feeding in the sea) and to a lesser extent of large spring fish (three years feeding in the sea) appear to have been slightly better than in 1972 but much better than in the previous four years. However the size of the runs of these fish was very much less than had been experienced up to about the year 1964. In view of the better runs of early-running fish, rod catches in some of the earlier rivers improved over those of earlier years.

The Corporation of Dublin Wholesale Fish Market and firms associated with it handled 148,357 salmon and grilse weighing 1,116,133 lb. in 1973 compared with 124,332 fish weighing 943,420 lb. in 1972. In 1973 this market handled about 27.5% by number and 27.9% by weight of all the fish taken in the country outside the Foyle area.

Details of the catch of sea trout in 1973 in the various Fishery Districts are given in Appendix No. 13. The catch of sea trout in 1973 amounting to 73,292 lb. and valued at £35,180 was of the same order as 1972. Very little specific commercial fishing for sea trout is undertaken in this country and in 1973 about half the catch was taken on rod and line, the remainder being taken as a by-catch of commercial fishing for salmon. Because in many cases the by-catches are small the commercial fishermen concerned do not record their catches accurately so that the returns given in Appendix No. 13 represent a minimum catch rather than the true figures. The catch of sea trout as returned was distributed by weight as follows:—

Rod and Line	...	48.6%
Draft nets	...	31.4%
Drift nets	...	20.0%

The catch of sea trout on rod and line was 35,609 lb. or a considerable reduction on that of previous years. Because in many Fishery Districts few anglers fish specifically for sea trout the average catch per licence, unlike that for salmon, gives a rather poor indication of the potential for sea trout fishing as a whole. In some districts, as, for example, the Connemara Fishery District, in which sea trout are important, the average catch per licence in 1973 was 9.7 fish weighing 14.2 lb.

As mentioned earlier, conditions were not favourable for angling during parts of the 1973 season but conditions varied very much from district to district.

Although it is difficult to estimate the size of the runs of smolts to the sea without special counting devices, most of the Boards of Conservators report average to good smolt runs in 1973.

Spawning stocks were also very varied in character. In some dis-

tracts, particularly in the South-West, spawning stocks were poor, whereas in other areas they were reported as being adequate.

Ulcerative Dermal Necrosis (UDN) continued to affect salmon, and to a very much lesser extent sea trout and brown trout, during the year. Outbreaks of the disease in salmon were still serious in the Rivers Lee and Bandon, and to a much lesser extent in the Blackwater. Some small rivers were also affected. However generally the degree of incidence was low and was restricted mainly to the colder months of the year. The effect on sea trout and brown trout during 1973 was slight and as in previous years the disease was not detected in fish other than salmon, sea trout or brown trout. Despite the presence of the disease in some rivers large numbers of healthy or clean salmon were taken on rod and line.

In the 1972/73 season to offset UDN ova were imported for restocking purposes as follows:—

<i>Salmon ova</i>		<i>Sea trout ova</i>	
Norway	... 212,000	Scotland	... 450,000
Sweden	... 40,000		
Northern Ireland	... 200,000		
Scotland	... 40,000		

As explained in earlier reports the returns for the catch of eels (Appendix No. 16) are incomplete. The quantity returned for 1973 amounted to 199,236 lb. valued at £129,502. There is evidence, however, that the catch was higher than the figure returned.

**ECONOMIC EVALUATION.**—The Economic and Social Research Institute which is carrying out an economic evaluation of Irish salmon fishing sponsored by the Department published in February 1973, the first paper of its study entitled *The Visiting Anglers*.

Work on the second paper *The Irish Anglers* had reached an advanced stage at the end of the year.

**INLAND FISHERIES COMMISSION.**—The Commission continued its work during 1973. Further action was taken on the two interim reports on control of drift and draft netting as set out underneath.

**Regulation of Salmon Net Fishing.**—Following an examination of the operation of the Control of Fishing for Salmon Order 1972 the Parliamentary Secretary made a further Order under Section 29 of the Fisheries (Amendment) Act 1962 entitled Control of Fishing for Salmon (Amendment) Order 1973. The Order widened the range of eligibility for salmon net licences and provided for the issue of such licences for public fisheries in tidal waters to persons who held a licence in any of the years from 1968 to 1972 and derived their livelihood mainly from fishing.

Having regard to the increased number of salmon fishing licences issuable under the Amendment Order the Parliamentary Secretary as a further salmon conservation measure made a bye-law entitled Control of Fishing for Salmon and Trout (Temporary Restriction) Bye-Law No. 563. The bye-law prescribed periods in 1973—in addition to the Annual Close Season—during which fishing for salmon or trout by any method other than rod and line was prohibited in the fresh and tidal waters of the fishery districts named in the bye-law. As the method of commercial fishing in the Connemara fishery district is confined to drift netting from 1 April to 21 July and was fixed as recently as 1969, that fishery district was excluded from the bye-law.

The operation of the above measures during the 1973 season were reviewed and the Parliamentary Secretary made an Order entitled Control of Fishing for Salmon Order 1973. The Order:

- (i) limits the number of salmon fishing licences for fishing engines other than rod and line for use in public and private fisheries in all waters other than fresh water lakes or the fresh water portion of any river which Boards of Conservators can issue in the 1974 salmon fishing season to the number of such licences issued by that Board for the 1973 fishing season;
- (ii) provides for the extension of the weekly close time in the case of privately owned fisheries to 1 p.m. on Mondays during the salmon fishing season.

With a view to maintaining uniformity of treatment the Parliamentary Secretary made a bye-law entitled Control of Fishing for Salmon (Alteration of Weekly Close Time) Bye-Law No. 565 which provides for a similar extension of the weekly close time in respect of private fisheries in the fresh water portion of rivers.

**BOARDS OF CONSERVATORS.**—Details of receipts and expenditure of Boards of Conservators in the fishery year ended 30 September 1973 are given in Appendix No. 18.

*Dissolution of Cork Board of Conservators.*—Following the refusal of the Cork Board of Conservators to review the salmon net licences issued by it for the 1973 salmon fishing season so as to ensure that the licensees concerned were fully qualified in accordance with the criteria of eligibility prescribed in the Control of Fishing for Salmon Orders, the Parliamentary Secretary made an Order entitled Cork Board of Conservators (Dissolution) Order 1973. The Order provided for the dissolution of the Cork Board of Conservators and the appointment of an Assistant Principal Officer of the Inland Fisheries Division of the Department of Agriculture and Fisheries to perform the duties of the Board.

**EMPLOYMENT IN THE INDUSTRY.**—Exclusive of persons employed on the marketing and transport of fish a total of some 6,500

persons found either whole-time or part-time employment in inland fisheries during the year. The figure includes 4,550 persons estimated as engaged in netting for salmon under common law right, 414 employed by Boards of Conservators on protection of fisheries over the open and close seasons, 800 engaged in netting in the Foyle area or employed in that area on protection work, 150 engaged in development work on behalf of Inland Fisheries Trust Inc. and the remainder employed by proprietors of commercial salmon fisheries, by sport fishery owners or by angling associations.

**INSTRUMENTS OF CAPTURE.**—The total number of fishing licences of all kinds issued during the year was 14,212.

The totals in recent years were:—

1972	...	12,134
1971	...	12,975
1970	...	13,666
1969	...	12,808
1968	...	11,796
1967	...	12,626
1966	...	13,809
1965	...	14,647
1964	...	13,598
1963	...	11,343

The numbers of the various classes of licences issued in each fishery district during the year and the rates of licence duty are given in Appendices Nos. 19 and 20 respectively.

**EXPORTS OF FRESHWATER FISH.**—Salmon:—The total quantity of salmon exported in fresh, chilled, frozen and smoked forms was 23,830 cwt. compared with 22,326 cwt. in 1972. Total value of these exports rose from £1,762,000 in 1972 to a record figure of £1,963,700.

Details for the two years are as follows:—

1973			1972	
Fresh, chilled and	cwt.	£	cwt.	£
frozen salmon ...	23,050	1,878,800	21,813	1,693,145
Smoked salmon ...	648	81,800	513	68,907

Of the total quantity of fresh, chilled and frozen salmon exported in 1973, 16,277 cwt. went to Great Britain, 3,613 cwt. to France, 1,113 cwt. to Spain, 745 cwt. to the Six Counties, 484 cwt. to the Netherlands, 337 cwt. to Belgium and 319 cwt. to the Federal Republic of Germany.



The smoked salmon was exported mainly to Great Britain (285 cwt.), U.S.A. (98 cwt.), Federal Republic of Germany (82 cwt.), Belgium (53 cwt.), Switzerland (33 cwt.), South Africa (29 cwt.), and Austria (23 cwt.).

The average export price of fresh, chilled or frozen salmon was £81.51 per cwt. as compared with £77.62 in 1972. The foregoing figures include landings of salmon in County Donegal from waters in the area administered by the Foyle Fisheries Commission.

Ninety-eight licences to export salmon under the Agricultural and Fishery Products (Regulation of Export) Act, 1947 (Export of Salmon) Order, 1954 (S.I. No. 275 of 1954) were issued during the year.

Rainbow Trout.—Exports of rainbow trout in 1973 amounted to 4,050 cwt. valued at £155,000 as compared with 1,810 cwt. valued at £50,900 in 1972.

Eels.—Exports of eels in 1973 amounted to 1,830 cwt. valued at £74,700 as compared with 1,750 cwt. valued at £61,900 in 1972.

*EEL FISHING—DEVELOPMENT.*—As indicated in the paragraphs dealing with scientific investigations and engineering, work continued during the year on the investigation of eel stocks and eel fishing techniques and advice and information on eel fishing was given to interested persons.

Thirty-one eel fishery authorisations were issued during the year bringing the number of eel fishing engines operating under such authorisations in 1973 to 39.

*ARTIFICIAL PROPAGATION.*—Details of salmon, sea trout and brown trout ova produced at the various hatcheries are given in Appendix No. 23.

The output of salmon ova in the 1972/73 spawning season amounted to 3,172,000. 455,000 salmon ova/fry were distributed from the Department's hatchery at Glenties, Co. Donegal.

The produce of Cong and Virginia Hatcheries was reared to under-yearling stage and distributed as follows:—

Cong —River Moy System

Cong River

Clare-Galway River

Virginia—River Boyne System.

The produce of Carrowmore Lake Incubating Unit which is mostly

that of Spring Fish was reared at Cong and Virginia Hatcheries to underyearling stage and distributed as follows:—

Cong to Owenmore System

Virginia to River Slaney.

Over 2 million brown trout ova were handled at Inland Fisheries Trust hatcheries and production for the year exceeded 2,000,000 consisting of eyed ova, fry, summerlings, fingerlings, yearlings and adult trout. One and a half million of these were released into trout waters being developed by the Trust and over  $\frac{1}{4}$  million were sold to angling clubs and other fishery interests.

150,000 rainbow trout ova were handled by the Inland Fisheries Trust and production for the year was 77,800 consisting of fingerlings, yearlings and adults. Of these 66,200 were stocked in Trust rainbow trout waters and 11,600 were sold.

**SCIENTIFIC INVESTIGATIONS.**—Full details of the scientific investigations in the inland fisheries field are given in *Inland Fisheries Bulletin* No. 11, 1974. During the year three issues of *Irish Fisheries Investigations*, Series A (Freshwater) were published together with four *Fishery Leaflets* relating to freshwater research (see page 72).

During 1973 special attention was paid to the collection of catch statistics and scale sampling in order to make estimates of the fluctuations and composition of the runs of salmon in the major river systems, including the relative numbers of salmon (two or more years feeding in the sea) and grilse (less than two years in the sea). This information is required to assess the stock position generally but also to provide background information in connection with the Greenlandic and high seas fisheries for salmon.

Special attention was also paid to the salmon runs in the River Erne for which drastic conservation measures have been introduced in recent years.

In 1973 a slight, albeit small, improvement was noted in the runs of salmon and there was a further increase in the catch of grilse over that of 1972. A notable feature of the 1973 season was the high average weight of grilse in most rivers.

A small number (274) of female salmon kelts were tagged in 1973 at three hatcheries and three recaptures were made. Nearly 3,000 pre-smolts were tagged at the Carrigadrohid rearing station on the River Lee in January. During the year seven recaptures were made in Irish waters of salmon tagged off West Greenland in the autumn of 1973 as part of an international salmon tagging scheme organised by the International Council for the Exploration of the Sea to elucidate some of the problems connected with the salmon fishery in the West Greenland area. Three recaptures were reported of salmon tagged as pre-grilse off the Faroe Islands earlier in 1973. A total of 21 fish originally tagged

as smolts in Great Britain were recaptured at various places along the Irish coasts from the Old Head of Kinsale to the River Foyle. Recaptures of two fish, one tagged as a kelt in the Burrishoole River and the other as a smolt in the River Boyne were reported from the West Greenland area in 1973. A small scale tagging operation was also carried out on clean salmon along the coast of West Cork. A total of 87 fish was tagged and 10 recaptures were made from localities from the River Lee on the East to the River Laune on the West.

In August 1973 a specimen of the hump-backed salmon (*Oncorhynchus gorbuscha*) was taken in the River Moy. This species of Pacific origin was extensively planted some years ago in rivers in the USSR flowing into the Barents Sea. Large numbers were recaptured as adult fish in Russia, Norway, Iceland and a few in Great Britain but none in Ireland until 1973.

An account of the specimen sea trout captured in Irish waters up to October 1973 was prepared for publication as an appendix to the annual report of the Irish Specimen Fish Committee. Representative collections of scales with relevant data from sea trout were made for a number of important fisheries during the season.

Preliminary investigations into the length of brown trout at first spawning in some western lakes were made during the year and additional data as to age, growth rates, fecundity, spawning frequency, parasitic infections and feeding habits was also collected.

During 1973 investigations of the effects of the drainage works on the River Boyne on the stocks of salmonoid fishes were continued and estimates of the numbers of trout and young salmon per unit area of stream bottom were made for the different parts of the river system. Work on the assessment of the value of the area above Lough Ramor at Virginia, Co. Cavan as a nursery for young salmon was held up because of flooding difficulties. The effects of the drainage works on the Trimbletown River were investigated during the year, particularly with regard to the repopulation of the river by both animals and plants.

Further studies were made during the year into the survival of planted salmon fry in sections of tributary streams of the River Owenea, the fisheries of which are owned by the Department.

Preliminary surveys were made of the conditions in the River Suir in relation to water quality and electro-fishing and surveys were made of the stock position as regards adult salmon in the rivers entering Bantry Bay. The Avonmore River which has been poisoned by washings from mine workings for many years was surveyed in relation to the possibility of planting salmon in the river system.

New ground was broken in 1973 in relation to the investigation of the eel stocks in Irish waters. For the first time elvers and young eels were investigated in an attempt to ascertain in what numbers and how far they travel upstream. To fill one of the gaps in our knowledge as to populations in acid waters of low productivity, eels from Lough

Feeagh were sampled in 1973. Other waters sampled included some County Clare lakes near Newmarket-on-Fergus, the Broadmeadow estuary in north county Dublin, the Wexford South Sloblands and the Munster Blackwater.

Regular visits were paid to all rainbow trout farms during the year and data on production, survival of young fish and brood stock performance was collected. Further attention was paid to the collection of economic data on small scale units to enable an up to date assessment to be made of the minimum economic production for a small unit operating on its own. The disease position in the various farms was also kept under review. Some difficulties were experienced with the young stock which was being kept for brood purposes but the programme of selective breeding started in 1972 on two small units was continued. A brief survey of the portions of the adjoining rivers upstream and downstream of the outfalls of two fish farms was carried out in June 1973 using electro-fishing methods and the results indicated that the "escapes" presented no problem of competition with the natural stocks of trout or salmon.

Considerable attention was given during 1973 to fish diseases including Ulcerative Dermal Necrosis (UDN) of salmon. By suitable methods it was found possible to transmit the disease several times using ultra filtrates of the lesions. Researches into various aspects of the physiology and biochemistry of *Saprolegnia parasitica*, one of the fungoid organisms associated with UDN, were also continued.

Considerable attention was given during the year to the rearing of salmon for restocking purposes at several stations throughout the country and observations were made of the survival in the different stages. The Inspector of Fisheries on the inland fisheries side continued to act as a liaison officer between the Department and the Galway Board of Conservators in relation to the Cong hatchery and one of the Assistant Inspectors of Fisheries with the Drogheda Board of Conservators in relation to the Virginia hatchery.

The staff of the Department contributed to the annual meeting of the Joint Working Party on North Atlantic Salmon of the International Council for the Exploration of the Sea and the International Commission for the North-West Atlantic Fisheries. Members of the staff of the Department continue to identify specimens and to read scales for members of the public and the Irish Specimen Fish Committee. They also give advice generally on the management of fisheries and their improvement and on applications to the local authorities for planning permission which may have adverse consequences for inland fisheries, matters relating to pollution etc. They contributed papers and took part in a variety of scientific and technical meetings as indicated elsewhere. Papers published by members of the staff during the year are referred to on page 72.

Holders of Studentships in Fisheries Science undertook work on the following topics:—

- a. Protein polymorphism in Atlantic salmon;

- b. The phytoplankton of Lake Garadice and St. John's Lake on the River Erne;
- c. The distribution, substrata preferences and life history of *Asellus aquaticus* and *A. meridianus*, and
- d. Trichoptera in Irish waters.

A member of the scientific staff acts as Director of Research for the Salmon Research Trust of Ireland and also as scientific adviser to the Foyle Fisheries Commission.

### ENGINEERING

*Arterial Drainage.*—Work continued on the major arterial drainage scheme for the catchment of the River Boyne and that for the Corrib-Headford was enlarged to include the catchment of the Cornamona River. There were regular inspections of the works in progress and consultations took place with officers of the Office of Public Works to ensure that all practicable steps were taken in the course of the work carried out on each channel or as soon as possible after its completion, to safeguard fishery interests in accordance with the proposals for this purpose drawn up by Fisheries Division prior to the implementation of these schemes.

Once again effective use was made of an electric barrier to exclude spawning fish from the Stoneyford River where drainage works were in progress and spawning areas disrupted during the spawning season.

Post-drainage rehabilitation work requested by the Department was carried out by the Office of Public Works on the following tributaries of the River Boyne—Rivers Skane, Boycetown and Knightsbrook.

Work continued on the construction of the salmon rearing installation at Virginia, Co. Cavan and was sufficiently advanced at the end of the year to permit use being made of the hatchery equipment for the hatching out of an initial batch of salmon ova which were obtained from adult salmon caught in the old salmon traps at Blackcastle, Co. Meath on the main River Boyne. Certain temporary repairs to these traps were carried out by the Office of Public Works in accordance with the instructions of the Department to allow of their being used once more.

The provision of all these trapping and rearing installations is being undertaken by the Office of Public Works as a charge on the cost of the drainage scheme to compensate for the interference with fishery interests by the drainage work.

Work commenced on the drainage of the Cornamona River in April and with the agreement of Fisheries Division continued throughout the summer and autumn to ensure its completion and the implementation of the remedial works Fisheries Division had requested, before the onset of the spawning season. There have been periodic checks of the dredged channels of this river since the completion of the scheme to record the after effects of the drainage work on the river channel and

the effectiveness of the rehabilitation measures in restoring it to a suitable condition for the spawning of fish and the rearing of their offspring.

The comprehensive pre-drainage survey of matters relating to the fishery interest in the catchment of the Mask-Carra scheduled for drainage in the near future was completed in 1973. This was undertaken by the Inland Fisheries Trust at the request of the Department. The information obtained in this way will form the basis of recommendations to the Office of Public Works for works to be undertaken to preserve the fishery interests when the drainage work commences.

A beginning was made on a comprehensive survey of post-drainage conditions in the River Moy catchment, which was drained in former years, to assess the present condition of the various river channels so that further remedial works can be carried out where the need is seen to exist. Shortage of staff delayed the completion of this investigation which will be recommenced whenever it is possible.

Detailed plans for the restoration and maintenance of angling pools and holding pools in the lower reach of the River Ouvane, Co. Cork, were drawn up and it is hoped that the necessary work will be implemented in due course. A drainage scheme was undertaken in the River Ouvane in 1961 but the river has not recovered its full potential and there is need for some additional rehabilitation work.

Another stretch of river in which drainage work was undertaken some years past and for which the remedial measures taken have not proved completely satisfactory is that portion of the river Feale, Co. Kerry, which is located upstream of Finuge Bridge and which extends to a short distance downstream from the town of Listowel. A new scheme of improvement works has been designed in the light of the experience gained since the former works were executed. It is expected that these will enhance the angling potentialities for this stretch of river and provide better facilities for the passage of salmon upstream at times of reduced flow in the river. Discussions were initiated with various interested parties with a view to implementation of these works in the near future.

The Office of Public Works continued work on the Cost Benefit Analysis of the proposed River Maigue Catchment Drainage Scheme and the Department's officers continued to collaborate in this exercise by supplying information on fisheries interests and assessing the likely effects of the drainage work on them.

*Electricity Generating Installations.*—The various installations built for the generation of electricity by water power and by steam were kept under observation as necessary in consultation with the officers of the Electricity Supply Board and the effects of the operation of these installations on fish life monitored.

*Investigation of Fish Movements.*—Salmon smolts migrating downstream on the River Corrib were caught in the fish trap at Galway

sluice barrage and counted. This exercise commenced on 16 April and continued until 1 June by which time the main run had ended. 78,000 smolts were trapped and released this year compared with 45,000 in 1972, 77,560 in 1971, 14,700 in 1970 and 85,947 in 1969. The screens which divert the smolts from the channel in which they are passing downstream into this trap were not placed in position until 16 April because of the prevailing high flow conditions in the river prior to that date and it is probable that some early running smolts moved downstream in this channel before trapping commenced and that others passed downstream through the sluice gates in the barrage which were open at the time. No salmon kelts were captured this year in this trap and it is assumed that they had passed downstream before the screens were placed in position. The maximum number of smolts taken from the trap in one day was 10,000 on 29 April.

In addition to the smolts three sea trout, one brown trout, sixteen eels and eight perch were trapped in this installation and released.

Work was completed on the smolt trapping and counting installation on the Glen River adjoining the Department's salmon hatchery at Glenties, Co. Donegal. The work was carried out by the Office of Public Works in accordance with the plans prepared in Fisheries Division. It was necessary to rebuild this installation to reduce the possibility of damage and over-topping at times of flood flow in the river.

*Electronic Fish Counters.*—An automatic salmon and sea trout counter was installed at Kelly's Carry on the River Lennon, Co. Donegal and was financed jointly by the Letterkenny Board of Fishery Conservators, Bord Fáilte Éireann and the Department. Outline plans for a salmon counting installation were drafted for installation in the projected ponding weir on the River Feale as part of the North-East Kerry rural water supply scheme.

Existing electronic fish counting installations on the Rivers Bandon, Bunree, Blackwater, Boyne, Corrib and Inagh were maintained and the installation on the River Liffey was modernised. The salmon count recorded at these installations is summarised as follows:—

River	Location	Total Count	Daily Maximum	Date
*Bandon	Bandon	1,596	48	5 March
Bunree	Downhill	447	35	12 October
Blackwater	Clondulane	2,857	132	4 November
Boyne	Blackcastle	1,173	42	10 November
Corrib	Galway	8,965	589	10 June
Inagh	Ennistymon	1,088	120	17 December
*Liffey	Islandbridge	157	12	21 June

\*Liffey.—Installation under-counting prior to modernisation.

\*Bandon.—Possible under-count. Trouble experienced in discriminating between salmon and sea trout.

The Department's consultant continued his research and development work on wide gap counting systems and on downstream migrant trapping and counting. In the case of the bio-electric salmon counter (code-named Delta Vee) improved circuits were evaluated in the laboratory.

The downstream migrant trap (code-named PET) was subjected to river tests during smolt and eel migrations but performance evaluation had to be suspended pending site alterations to eliminate adverse hydraulic conditions in the river channel which were interfering with the conduct of the experiments.

*Fish Culture Installations.*—The salmon hatchery and rearing station at Cong, Co. Mayo, continued to operate under the control of the Galway Board of Fishery Conservators. During this year no difficulties were experienced from shortage of water because drought conditions did not occur as in the previous three years. Nevertheless positive steps were taken to augment the water supply to this installation as it is the intention to expand it by providing additional ponds suitable for the production of smolts. Divers were engaged to carry out an under-water survey of the subterranean fed artificial pond from which the water supply to the hatchery is drawn to pin point seepage zones through which a considerable quantity of water escapes downstream at all times of the year and is denied to the hatchery installation especially at time of drought flow. The intention is to seal these seepage areas and to make this water available in future for rearing purposes. This must be done if there is to be sufficient water to meet the needs of the additional ponds, proposed plans for the construction of which were completed this year.

The numbers of salmon produced and distributed in 1973 were as follows:—

60,000 salmon fingerlings to the River Moy System.

40,000 salmon fingerlings to the Bangor Fishery District.

15,000 salmon fingerlings to the River Corrib System.

The Glencullen salmon trapping and ova incubation unit was operated under the control of the Bangor Board of Fishery Conservators with the assistance of the officers of Fisheries Division. There were a number of power failures in the National Electrical Grid during the hatching season because of winter storms and the petrol driven standby pumps provided to deal with such a contingency were brought into use successfully and maintained the water supply to the ova incubation unit during the period of electricity failure so that no loss of ova was experienced.

The salmon hatchery and rearing unit at Virginia, Co. Cavan, operated on a preliminary reduced scale under the direction of the Drogheda



Board of Fishery Conservators and 130,000 salmon fingerlings were produced and distributed as follows:—

River Boyne System	...	100,000
River Slaney System	...	30,000

An adult trap house to enclose the existing trap pool on the Mill Stream at Furnace was designed for the Salmon Research Trust of Ireland Incorporated and drawings and specifications were prepared for the replacement of the adjoining fish fence.

*Rainbow Trout Fish-Farming.*—Existing fish-farm units were kept under observation and engineering advice provided, where requested, on improvements. Sites being considered for development for fish-farming purposes were inspected and advice supplied on their suitability. The Inspector and Engineer accompanied by the Inspector and Scientific Adviser investigated an intensive fish culture unit under development in England, the introduction of which to Ireland has been advocated, and assessed its suitability for employment under Irish conditions.

*Eel Fishery Development.*—As in former years a number of eel fishery installations in existence or projected were investigated and the owners advised on desirable improvements. A feature of the year was the increasing number of applicants seeking authorisation to use fyke nets for the capture of eels in the Western regions.

The experimental eel trap, which has been incorporated in a drainage sluice flap which has been built in the flood embankments along the lower Shannon, was operated until the end of February and again from 1 October onwards. Total catches were small but the trapping system proved to be efficient and yielded useful information on the pattern and duration of eel migration and the structure of the stocks.

The Inspector and Engineer continued to act as Chairman of the EIFAC ad hoc Working Group on Eel Fishery Development.

*Application of Electricity to Inland Fisheries.*—Research and development work on the application of electricity to inland fisheries was continued by the Department's consultant at the field laboratory at the State salmon hatchery at Glenties, Co. Donegal in association with the Department's engineering staff.

Reference has already been made under "Arterial Drainage" to the successful operation of the electric barrier at the mouth of the Stoneyford River for the exclusion of spawning salmon from this river while undergoing drainage operations.

The barrier at Glencullen Bridge, Carrowmore, Co. Mayo, once again operated successfully to facilitate the capture of adult salmon

for the local hatchery. The blocker arrangement installed in Kelly's Carry at Ramelton, Co. Donegal on the Riven Lennon to deny fish passage across this weir except through the electronic fish-counting installation in the fish pass in that weir operated successfully. Designs for similar installations were drawn up for the Foyle Fisheries Commission for incorporation in Sion Mills weir on the River Mourne at Sion Mills, Co. Tyrone. A similar type installation was recommended for incorporation in the weir to be built across the River Feale downstream of Listowel, Co. Kerry, as part of North-East Kerry regional water supply scheme.

Research and development work on barrier technology continued and advice was furnished by the Inspector and Engineer and the Department's consultant to several fishery authorities outside the State requesting it.

*River Improvement Schemes.* — The comprehensive survey of the spawning grounds and nursery areas of the Rivers Owenmore, Feale and Slaney continued during the year but could not be completed due to the shortage of experienced staff and likewise a similar survey of western fishery districts with the object of drawing up a long-term programme for essential and desirable river improvements. Reference has already been made under "Arterial Drainage" to plans prepared for improvement works in the River Ouvane. These works are located in the section of river downstream from Carriganass Falls and plans are in the course of preparation for the construction of a fish pass in these Falls. A comprehensive survey was made of the changes brought about in the river channel by gravel-winning operations on the Southern Bride in the general Ovens area and proposals are being drafted to restore the channel to a condition that will ensure safe migration of salmon and smolts.

Investigations and preliminary surveys were carried out at a number of sites at which fish passes may have to be built to facilitate salmon movements. A design was prepared for a fish pass on the Horseman's River near Aughrim, Co. Galway and supplied to the adjoining landowner. Preliminary survey work was completed for fish passes proposed at Hanley's Falls on the Easkey River and at Curry Dam in the Moy System and at the Askeaton tail race on the River Deel in Co. Limerick. Further efforts were made to secure agreement of interested parties to the construction of a fish pass at Oughterard Waterfall on the Owenriff River in Co. Galway but these were unsuccessful.

At the request of Bord Failte Eireann one of the Fishery Engineers carried out an investigation of the Shuckborough Fishery on the River Fane and prepared a development programme for the Fishery.

*Polluting Effluents.*—Proposals for the treatment and discharge of effluents from existing and projected undertakings, particularly those seeking financial support from the State, were examined and commented on in the light of their likely impact on fishery interests. There

was a very substantial increase in the number of cases dealt with during the year and substantial progress was made in the drive to have industrial, domestic and agricultural effluents treated in a manner to make them acceptable from the fisheries viewpoint.

*Water Abstraction.*—Major water abstraction schemes, some of which contemplate the abstraction of up to 48,000,000 gallons of water per day were submitted and investigated. These continue to pose increasing problems in inland fisheries conservation and management. All schemes submitted were carefully investigated by the Division's Engineers and recommendations put forward to the Local Authorities and their Consultants for the mitigation of interference with migration and survival of fish stocks.

One of the Department's fishery engineers continued to serve as Departmental representative on the Technical Project Committee set up by the Kerry County Council to advise on plans for the major impoundment and abstraction schemes proposed for the River Feale in Co. Kerry.

*Bye-Laws, Licences, Orders and Definitions.*—Maps were prepared in connection with various bye-laws, orders and licences and other statutory instruments and specialist advice was supplied to various Boards of Conservators on a wide range of problems including pollution, fish passes, marking of  $\frac{1}{2}$  mile limits and adjuncts to fishery protection work such as the selection of suitable patrol boats and the purchase of portable radio telephone equipment.

*Miscellaneous.*—The Inspector and Engineer continued to act as an adviser to the Inland Fisheries Commission and also as Fishery Engineering Consultant to the Salmon Research Trust of Ireland Incorporated and to the Foyle Fisheries Commission. He also continued to act as council member of the Inland Fisheries Trust Incorporated and as Departmental representative on the UNESCO Hydrological Decade National Committee for Ireland.

One of the Department's Fishery Engineers participated in a seminar on Pollution Criteria for Estuaries conducted by Southampton University.

The Inspector and Engineer attended the meetings at Bremerhaven and Hamburg of the Working Group of the West European Fish Technologists' Association concerned with the implementation of EEC grading regulations for fresh fish and the formulation of common marketing standards for frozen fish.

The Inspector and Engineer was appointed as Departmental representative on the Committee appointed by the Minister for Defence to make arrangements for the construction of a sail training vessel to replace the "Asgard".

*Visitors.*—A conducted study tour was arranged for officers of the Northumbrian River Authority following their request for information on techniques for electrically blocking and guiding salmon.

A conducted study tour of research installations was arranged for officers of the Fisheries Division of the North of Ireland Department of Agriculture.

### FOYLE FISHERIES COMMISSION

The Report of the Foyle Fisheries Commission for the period ended 31 December 1973 gives detailed information on the Commission's activities during the previous 15 months.

The spawning count for 1973 was 1,545 compared with 2,153 in 1972.

The catch of salmon and grilse by commercial engines was 61,795 compared with 69,530 in 1972. The rod catch of both salmon and sea trout increased from 6,290 in 1972 to 13,515.

The total catch of salmon and grilse in the commercial fishery operated by the Commission on its own account (the Londonderry stretch) was 7,735 compared with 6,724 in 1972.

The commercial fishery yielded the Commission a profit of £14,326 compared with £14,720 in 1972. The Commission received contributions totalling £12,000 from this Department and the Northern Ireland Department of Agriculture during the year under review and at 30 September 1973 there was an accumulated deficit of £30,500.

The Accounts for the year ended 30 September 1973 and particulars of the Regulations made by the Commission during 1973 are included as appendices to the Commission's report.

### INLAND FISHERIES TRUST INCORPORATED

The Annual Report of the Inland Fisheries Trust for 1973 gives a review of the work carried out by the Trust during the year. The grant-in-aid paid to the Trust by the Department in the financial year 1973/74 amounted to £370,000.

Work was continued during the year on development, improvement and maintenance of trout fisheries on rivers and lakes. 1½ million brown trout, consisting of eyed ova, fry, fingerlings and yearlings, were released to waters to supplement natural production. Work continued on spawning and nursery grounds to improve natural spawning. To control predators, 18 tons of pike, 30 tons of adult perch and 5 tons of perch spawn were removed from trout lakes and rivers. Surveys were made of 30 new waters to assess their suitability for future development as trout or coarse fisheries. Improved facilities for coarse fish anglers were provided at 39 centres and live bait was made available for visiting pike anglers.

With regard to sea angling, investigations into the location, movements, growth and habits of marine sport fish were continued off the South and South-West coast. Experiments were conducted to test the possibility of sport-fishing for Albacore/Tuna but the results were not encouraging.

A supplement to the Trust's Annual Report deals with the problems created by pollution and eutrophication and describes the principal types of water pollution and eutrophication which occur in this country.

### THE SALMON RESEARCH TRUST OF IRELAND INCORPORATED

The Annual Report of the Salmon Research Trust gives a detailed account of the work carried out by the Trust in 1973. The grant-in-aid paid to the Trust by the Department in the 1973/74 financial year amounted to £6,000.

The run of spring fish remained at the same low level of 1972. The wild grilse and sea trout runs however were the largest to date. The heavy grilse run was due to increased survival from the smolt stage which at 12.7% was greater than has been hitherto recorded.

There was poor survival of 7,906 reared smolts released in 1972 to the grilse stage in 1973, due to an outbreak of disease just as the smolts were ready for release. The recapture rate for 2-year old smolts was 1.55% and that for 1-year olds only 0.85% compared with 7.0% and 4.0% respectively, for 1972.

Due to losses from epidemics in the early summer periods of 1972 and 1973 only approximately 5,500 reared smolts were released in 1973. Ova and alevins were incubated in artificially warmed water from February to May, resulting in considerably increased early growth. The incidence of infection of UDN (Salmon Disease) was light among salmon and sea trout kelts in the early months of 1973 but when the disease recurred in November heavy mortalities occurred among hatchery stock fish.

### MANAGEMENT OF STATE FISHERIES

131 State owned fisheries—in the main vested in the Land Commission—were managed by Fisheries Division in 1973. Rents received during the year amounted to £4,126 compared with £4,091 in 1972.

Twenty of these fisheries which fell due for re-letting were advertised during the year.

### INTERNATIONAL AND OTHER CONFERENCES

a. *International Council for the Exploration of the Sea*.—The Department's Inspector of Fisheries and Scientific Adviser and one of the Inspectors of Fisheries took part in the annual meeting of the Council

held in Lisbon in September and October 1973. Biologists attached to the Salmon Research Trust Inc. and the Fisheries Division of the Electricity Supply Board also took part in the meetings of the Anadromous and Catadromous Fish Committee. The Department's Inspector of Fisheries and Scientific Adviser took part in the meetings of the same Committee and contributed a paper on the recaptures of foreign tagged salmon in Irish waters in 1972 and 1973 and one of the Assistant Inspectors of Fisheries also contributed a paper on Irish eels. The Inspector of Fisheries on the inland fisheries side took part in the annual meeting of the Joint Working Party of the Council and the International Commission for the North-West Atlantic Fisheries on North Atlantic Salmon in Copenhagen in March.

b. *North-East Atlantic Fisheries Commission*.—The Assistant Secretary in charge of Fisheries and the Inspector of Fisheries and Scientific Adviser took part as this country's permanent representatives in a meeting of the Commission in May in London when by the necessary majority it was decided to recommend to member States that all fishing for Atlantic salmon outside national fishery limits should be prohibited as from 1 January 1976. Although this proposal was passed by the necessary majority Denmark and Germany objected to the proposal which is not, therefore, binding on them but it is binding on the remaining member States including Ireland.

c. *International Symposium on the Ageing of Fish, Reading, July 1973*.—This symposium, organised by the Fisheries Society of the British Isles, the European Inland Fisheries Advisory Commission and the Freshwater Biological Association took place in the University, Reading, England in July. It was attended by two of the Assistant Inspectors of Fisheries as representatives of the Department and by the Department's Inspector of Fisheries and Scientific Adviser who represented the Salmon Research Trust of Ireland Inc.

d. *Salmon Research Group*.—This informal discussion group which operates under the aegis of the British Natural Environmental Research Council met twice during the year in May and November in London. The Inspector of Fisheries and Scientific Adviser and the Inspector of Fisheries on the inland fisheries side attended on both occasions and took part in discussions on sea trout and the predation by sea fish on salmon smolts.

e. *Conference of the Salmon and Trout Association*.—The Inspector of Fisheries and Scientific Adviser and the Biologist to the Salmon Research Trust of Ireland Inc. took part in the annual conference of the Association in London at which matters concerning the salmon and trout fisheries of Great Britain were discussed.

f. *Freshwater Research Group*.—This informal group holds annual meetings to enable workers in the freshwater field to exchange information on freshwater fisheries and associated problems. The group met in Cork in April 1973 under the chairmanship of Professor Fergus J. O'Rourke, Professor of Zoology at University College, Cork. The contingent from the Department included both biologists and engineers.

g. *Irish Specimen Fish Committee.*—The Department's Inspector of Fisheries and Scientific Adviser as Chairman of the Committee, presided at presentations of record medals, badges and certificates awarded for notable fish taken by fair angling in Irish waters in 1972. The ceremonies were held in Dublin, London, Manchester and at the Visma Exhibition in Rotterdam during the early part of 1973. On completion of the Chairman's term of office he was succeeded as Chairman by the Inspector of Fisheries on the sea fisheries side.

h. *International Advisory Group of the International Atlantic Salmon Foundation.*—This Foundation was established in the late sixties to foster an interest in the conservation of the stocks of Atlantic salmon. The Inspector of Fisheries and Scientific Adviser, who is a member of the International Advisory Group of the Foundation, attended the annual meeting in London in September 1973 and was elected Vice-Chairman of the Group for the current term.

## LEGISLATION

Particulars of the Statutory Instruments relating to Inland Fisheries made during the year are included in Appendix No. 22.

MICHAEL PAT MURPHY,  
Parliamentary Secretary to the  
Minister for Agriculture and Fisheries.

24 April, 1975.

# APPENDICES TO THE REPORT ON SEA AND INLAND FISHERIES FOR THE YEAR 1973

## Appendix

No.

PAGE

1. Quantity and Value of Sea Fish (excluding Salmon) returned as landed in 1972 and 1973 ... ..	44
2. Comparison of the Average Price per cwt. of various kinds of Sea Fish for years 1966 to 1973 ... ..	45
3. Value of Landings of Sea Fish (excluding Salmon) at ports at which the value of such landings exceeded £25,000 in 1973 ... ..	46
4. Imports and Exports of Fish and Fishery Products in 1973 (as compared with 1972) ... ..	47
5. Herring Fishing, 1973 ... ..	48
6. Mackerel Fishing, 1973 ... ..	49
7. Regional Distribution and Classification of Fishing Craft and of personnel engaged in Fishing in 1973 ...	50
8. Trawling and Seining, 1973 ... ..	51
9A.Statement of Account in respect of Repayable Advances ... ..	52
9B.Expenditure on Fisheries 1972/73 ... ..	53
10. Coastal extent of Fishery Districts and names of the Principal Rivers in each District ... ..	54
11. Quantity and Value of all Salmon and Sea Trout taken in 1971, 1972 and 1973 by Instruments of Capture ... ..	56
12. Quantity and Value of Salmon taken in 1971, 1972 and 1973 by Fishery Districts ... ..	57
13. Quantity and Value of Sea Trout taken in 1971, 1972 and 1973 by Fishery Districts ... ..	58
14. Quantity and Value of Eels taken in 1971, 1972 and 1973 by Fishery Districts ... ..	59
15. Total Quantity and Value of Salmon, Sea Trout and Eels taken by all engines in 1971, 1972 and 1973 by Fishery Districts ... ..	60



Appendix  
No.

## PAGE

16. Number, Quantity and Value of Salmon taken by Single Rod and Line in 1971, 1972 and 1973 by Fishery Districts	61
17. Number, Quantity and Value of Sea Trout taken by Single Rod and Line in 1971, 1972 and 1973 by Fishery Districts	62
18. Particulars of Receipts and Expenditure by Boards of Conservators for the year ended 30th September, 1973	63
19. Particulars of Licences issued by Boards of Conservators for the year 1973	64
20. Licence Duties Payable on Fishing Engines	65
21. Particulars of Public Inquiries held during 1973	66
22. Abstract of Statutory Instruments made in 1973	67
23. Distribution of Fish Hatchery Produce, 1972/73	70
24. Scientific and Other Papers, 1973	72

---

Appendices 11 to 17 are compiled from returns furnished by licence holders in pursuance of the Statistics (Salmon, Sea Trout and Eels) (No. 2) Order, 1945.

## APPENDIX No. 1

Quantity and Value of Sea Fish (excluding Salmon) returned as landed in 1972 and 1973

Kinds of Fish	QUANTITY		VALUE	
	1973	1972	1973	1972
	cwt.	cwt.	£	£
Soles ... ..	3,013	4,038	142,461	128,026
Brill ... ..	1,534	1,609	27,556	22,646
Turbot ... ..	1,815	2,069	33,027	28,944
Plaice ... ..	30,458	27,625	335,984	269,133
Dabs ... ..	2,450	2,859	11,592	9,895
Megrim ... ..	3,224	2,926	15,524	9,177
Other Flat Fish ... ..	4,242	2,968	19,445	10,341
Ray/Skate ... ..	25,960	26,302	212,932	184,065
Cod ... ..	89,679	54,682	633,773	322,533
Haddock ... ..	76,220	93,660	372,873	297,436
Hake ... ..	2,179	987	15,639	6,277
Whiting ... ..	130,486	77,912	449,574	194,829
Pollack ... ..	17,558	19,987	73,586	64,905
Other Round Fish ... ..	12,194	19,392	29,953	19,896
<b>Total Demersal ... ..</b>	<b>401,012</b>	<b>337,016</b>	<b>2,373,919</b>	<b>1,568,103</b>
Herrings ... ..	764,822	941,840	2,802,165	2,116,157
Pilchard ... ..	295	5,600	533	3,080
Mackerel ... ..	163,660	90,389	381,098	146,920
Sprats ... ..	150,422	115,046	132,736	65,333
<b>Total Pelagic ... ..</b>	<b>1,079,199</b>	<b>1,152,875</b>	<b>3,316,532</b>	<b>2,331,490</b>
<b>TOTAL WET FISH ... ..</b>	<b>1,480,211</b>	<b>1,489,891</b>	<b>5,690,451</b>	<b>3,899,593</b>
	Nos.	Nos.	£	£
Lobsters ... ..	455,199	426,407	507,012	374,310
Crawfish ... ..	93,782	163,180	210,373	256,983
Crabs ... ..	1,875,646	1,908,996	80,536	67,157
Escallops ... ..	474,489	1,806,988	30,659	79,628
Oysters ... ..	3,840,833	2,409,000	103,260	59,325
	cwt.	cwt.		
Dublin Bay Prawns ... ..	42,336	35,892	489,826	340,311
Mussels ... ..	58,332	78,664	44,130	47,600
Periwinkles ... ..	57,327	42,827	220,954	125,718
Other Shellfish ... ..	12,351	11,255	86,602	65,818
<b>Total Value Shellfish ... ..</b>	<b>—</b>	<b>—</b>	<b>1,773,352</b>	<b>1,416,850</b>
<b>TOTAL VALUE ALL FISH ... ..</b>	<b>—</b>	<b>—</b>	<b>7,463,803</b>	<b>5,316,443</b>

Total landings for Queen Escallops to 31/12/73, 5,250 cwt., value £22,800.

## APPENDIX No. 2

Comparison of the Average Price per cwt. of various kinds of Sea Fish for the years 1966—1973

	1966	1967	1968	1969	1970	1971	1972	1973
	£	£	£	£	£	£	£	£
Soles	23.25	21.51	21.88	22.89	25.86	26.89	31.71	47.28
Brill	10.87	10.08	9.73	9.74	11.22	12.20	14.07	17.96
Turbot	10.69	9.80	10.00	9.98	10.73	11.59	13.99	18.20
Plaice	7.92	7.75	7.22	7.94	9.35	9.33	9.74	11.03
Dabs	2.63	2.61	2.50	2.90	3.48	3.62	3.46	4.73
Megrim	3.80	3.14	2.83	3.17	3.93	3.35	3.14	4.82
Ray/Skate	4.02	4.16	4.36	4.55	5.65	6.13	7.00	8.20
Cod	3.95	3.62	3.36	4.36	4.95	4.98	5.90	7.07
Haddock	3.65	3.74	3.63	3.55	3.76	2.72	3.18	4.89
Hake	10.20	9.12	6.94	6.97	6.41	6.60	6.36	7.18
Whiting	2.17	1.95	1.86	2.18	2.55	2.02	2.50	3.45
Pollack	2.67	2.36	2.38	2.34	2.71	3.08	3.25	4.19
Herrings	1.36	1.07	1.10	1.15	1.43	1.89	2.25	3.66
Pilchards	0.55	0.43	0.65	—	—	—	0.55	1.81
Mackerel	1.57	1.16	1.14	1.43	1.92	1.93	1.63	2.33
Sprats	0.41	0.58	0.42	0.47	0.61	0.55	0.57	0.88

N.B.—“Average price” as shown in this table represents total value divided by total weight for each kind of fish, year by year. It does not purport to take direct cognizance of any abnormal rise or fall in price attributable to a seasonal glut or shortage of a particular kind of fish.

## APPENDIX No. 3

Value of Landings of Sea Fish (excluding Salmon) at ports at which the value of such landings exceeded £25,000 in 1973.

Port	Total Value	Demersal	Pelagic	Shellfish
	£	£	£	£
1. Killybegs ...	1,274,990	295,589	973,038	6,363
2. Dunmore East ...	875,766	63,761	780,138	31,867
3. Galway/Aran Islands ...	557,747	157,829	355,315	44,603
4. Howth ...	557,135	420,169	12,397	124,569
5. Castletownbere ...	530,671	132,258	354,108	44,305
6. Skerries ...	400,918	166,297	1,545	233,076
7. Dingle ...	323,700	121,862	153,996	47,842
8. Clogherhead ...	271,919	92,327	110,042	69,550
9. Kilmore Quay ...	261,575	196,954	10,753	53,868
10. Burtonport ...	183,248	68,017	94,170	21,061
11. Fenit ...	153,071	741	—	152,330
12. Mornington ...	126,781	11,737	107,607	7,437
13. Greencastle ...	122,646	116,560	—	6,086
14. Valentia Hbr. ...	120,837	52,025	35,916	32,896
15. Cebh ...	107,724	9,253	95,791	2,680
16. Schuil ...	90,989	48,507	2,091	40,391
17. Helvick ...	84,785	78,890	600	5,295
18. Bantry ...	76,333	—	55,050	21,283
19. Union Hall ...	65,555	39,564	4,963	21,028
20. Rossmore/Roscahill ...	62,796	40	120	62,636
21. Dun Laoghaire ...	58,288	45,075	1,708	11,505
22. Kinsale ...	46,390	35,852	1,391	9,147
23. Duncannon ...	43,352	41,174	978	1,200
24. Arklow ...	41,253	35,562	5,691	—
25. Castlegregory ...	38,820	—	—	38,820
26. Achill ...	35,778	23,638	—	12,140
27. Baltimore ...	33,449	—	120	33,329
28. Clifden/Cleggan ...	32,870	3,103	634	29,133
29. Blacksod ...	31,698	785	1,040	29,873
30. Ballinskelligs ...	29,863	22,673	2,962	4,228
31. Wicklow ...	29,537	8,189	4,518	16,830
32. Balbriggan ...	28,634	14,228	—	14,406
33. Glengad ...	27,779	4,530	—	23,249
34. Wexford ...	25,393	6,130	306	18,957

## APPENDIX No. 4

Imports and Exports of Fish and Fishery Products in 1973 (as compared with 1972)

	Quantity		Value	
	1973	1972	1973	1972
	cwt.	cwt.	£	£
I.—IMPORTS :				
Fish, fresh, chilled or frozen ...	25,668	23,465	267,000	608,000
Fish, salted, dried or smoked ...	31,923	27,472	518,000	396,000
Shellfish, fresh, salted or dried ...	12,538	9,571	374,000	358,000
Prepared or preserved fish	42,048	27,615	1,409,000	936,000
Prepared or preserved shellfish ...	651	377	48,000	26,000
TOTALS ...	112,828	88,500	2,616,000	2,324,000
II.—EXPORTS :				
Fish, fresh, chilled or frozen ...	489,842	457,094	5,866,000	4,145,000
Fish, salted, dried or smoked ...	353,093	361,082	2,078,000	1,636,000
Shellfish, fresh, salted or dried ...	108,851	86,782	2,437,000	1,202,000
Fish and shellfish prepared or preserved (including tinned) ...	16,029	21,171	252,000	775,000
TOTALS ...	967,815	926,129	10,633,000	7,758,000

## APPENDIX No. 5

## HERRING FISHING, 1973

Ports at which more than 1,000 cwt. were landed	Total Quantity cwt.	Value £
1. Killybegs ... ..	262,469	861,906
2. Dunmore East ... ..	183,811	778,522
3. Galway ... ..	94,914	344,853
4. Cobh ... ..	39,000	95,482
5. Clogherhead ... ..	32,020	109,382
6. Dingle ... ..	31,263	120,827
7. Castletownbere ... ..	28,719	133,692
8. Burtonport ... ..	20,099	86,776
9. Bantry ... ..	19,600	54,800
10. Mornington ... ..	15,009	11,890
11. Valentia Harbour ... ..	6,320	23,095
12. Teelin/Cladnageragh ... ..	3,465	11,572
13. Carraroe/Rossaveal ... ..	3,301	14,274
14. Howth ... ..	2,628	9,922
15. Kilmore Quay ... ..	2,444	10,451
16. Kincasslagh ... ..	2,358	10,079
17. Courtown ... ..	2,029	8,076
18. Rosslare ... ..	1,476	5,583
19. Arklow ... ..	1,418	5,600
20. Wicklow ... ..	1,346	4,458

## APPENDIX No. 6

## MACKEREL FISHING, 1973

Ports at which more than 1,000 cwt. were landed	Total Quantity cwt.	Value £
1. Killybegs ... ..	66,965	79,953
2. Castletownbere ... ..	63,407	216,124
3. Dingle ... ..	11,916	153,972
4. Valentia Harbour ... ..	5,512	12,821
5. Galway ... ..	4,743	10,426
6. Burtonport ... ..	3,216	7,394

# APPENDIX No. 7

## REGIONAL DISTRIBUTION AND CLASSIFICATION OF FISHING CRAFT AND OF PERSONNEL ENGAGED IN FISHING IN 1973

Coast	How Engaged	Men	Total Vessels	MOTOR VESSELS						Boats propelled by outboard engines, sails or oars	
				Gross Tons						18' Keel and upwards	Less than 18' Keel
				Over 75	51—75	26—50	16—25	11—15	10 and under		
EAST (Omeath to Carnsore Point)	Solely	587	166	11	36	52	6	—	29	30	2
	Partially Laid-up	280	91	—	—	—	—	—	10	57	24
	TOTALS	867	263	11	36	56	8	—	39	87	26
SOUTH (Carnsore Point to Loop Head)	Solely	720	329	12	33	30	10	15	181	48	—
	Partially Laid-up	1,095	401	—	—	—	—	—	46	259	96
	TOTALS	1,815	741	15	35	32	11	15	230	307	96
WEST (Loop Head to Erris Head)	Solely	316	372	3	5	16	1	7	168	148	24
	Partially Laid-up	1,281	223	—	—	—	—	—	22	84	117
	TOTALS	1,597	597	3	5	16	1	7	192	232	141
NORTH (Erris Head to Moville)	Solely	801	456	15	14	55	10	16	210	131	5
	Partially Laid-up	1,495	277	—	—	—	—	—	82	116	79
	TOTALS	2,296	746	18	14	56	13	16	296	249	84
TOTALS (All Coasts)	Solely	2,424	1,323	41	88	153	27	38	588	357	31
	Partially Laid-up	4,151	992	—	—	—	—	—	160	516	316
	TOTALS	6,575	2,347	47	90	160	33	38	757	875	347

50

# APPENDIX No. 8

## TRAWLING AND SEINING, 1973

Port or Locality	Number of men of boats engaged	Number of boats engaged	Tonnage of Motor Boats			Fishing Period
			Not ex-ceeding 10 tons	Over 10 tons	Over 15 tons	
Clogherhead	39	9	—	—	9	All year.
Balbriggan	18	4	—	—	4	All year.
Skerries	105	21	—	—	21	All year.
Howth	230	46	—	—	46	All year.
Dublin	6	2	—	—	—	All year.
Dun Laoghaire	55	11	—	—	11	All year.
Wicklow	15	3	—	—	3	All year.
Arklow	52	11	—	—	11	All year.
Courtown	9	3	—	—	—	Summer
Wexford	10	2	—	—	2	All year.
Rosslare	4	1	—	—	1	All year.
Kilmore Quay	65	13	—	—	13	All year.
Duncannon	30	6	—	—	6	All year.
Passage East	6	2	—	—	—	Autumn and Winter
Dunmore East	30	2	—	—	2	All year.
Helwick	10	3	—	—	3	Autumn and Winter
Youghal	6	3	—	—	3	Spring and Autumn
Ballycotton	10	5	—	—	5	All year.
Cobh	7	3	—	—	3	All year.
Kinsale	7	2	—	—	2	All year.
Union Hall/ Rathen	20	5	—	—	5	All year.
Cape Clear	5	1	—	—	1	All year.
Schull	36	6	—	—	6	All year.
Castletownbere	72	12	—	—	12	All year.
Ballinskelligs	5	1	—	—	1	All year.
Valentia	34	6	—	—	6	All year.
Cahirveen and Portmagee	48	8	—	—	8	All year.
Dingle	14	2	—	—	2	Winter.
Fent	3	1	—	—	1	All year.
Seafeld/Quilly Galway/Aran Islands	85	18	—	—	18	All year.
Rossaveal	10	2	—	—	2	All year.
Cleggan/ Inishboffin	7	2	—	—	2	All year.
Kilary/Tully/ Renvyle	4	1	—	—	1	All year.
Mulranny/Achill	24	6	—	—	6	All year.
Belmullet/Blackscod	13	3	—	—	3	All year.
Killala	4	1	—	—	1	All year.
Inver	10	2	—	—	2	All year.
Mullaghmore	4	1	—	—	1	All year.
Killybegs	280	49	—	—	49	All year.
Burtonport	70	14	—	—	14	All year.
Bunbeg	10	3	—	—	3	All year.
Buncrana	4	1	—	—	1	All year.
Greencastle	136	32	—	—	32	All year.
TOTALS	1,616	333	20	15	298	

51

## APPENDIX No. 9A.

STATEMENT OF ACCOUNT IN RESPECT OF REPAYABLE  
ADVANCES

I. Advances of £408,500 made to the Irish Sea Fisheries Association Ltd. during the period of twenty-one years to 23 April, 1952, for the provision of boats and gear:—	
	£
Advances and interest thereon up to 31 March, 1960	566,255
Repayments made to 31 March, 1960 ... ..	248,281
Amount written off in 1961-62 ... ..	186,000
Balance of advances to be repaid by a new annuity	131,974
	<hr/> 566,255
Instalments of new annuity to accrue up to 1972 ...	160,433
Repayments of new annuity :	
made to March 1972 ... ..	153,748
made during year ended 31 March, 1973 ...	6,685
not accrued at 31 March, 1973 ... ..	—
	<hr/> 160,433
II. Advances of £63,215 made to Irish Sea Fisheries Association Ltd. during the period of five years to 23 April, 1952 for purposes other than boats and gear:—	
	£
Total repayments to be made including interest ...	85,973
Repayments:	
made to 31 March, 1972 ... ..	84,897
made during year ended 31 March, 1973 ...	1,076
not accrued at 31 March, 1973 ... ..	—
	<hr/> 85,973
III. Advances of £5,124,563 made to An Bord Iascaigh Mhara during the period of twenty-one years to 31 March, 1973 for provision of boats and gear and other purposes:—	
Repayments of principal :	£
made to 31 March 1972 ... ..	802,377
made during year ended 31 March 1973 ...	87,122
Principal written off to 31 March 1973 ... ..	843,876
	<hr/> 1,733,375
Balance of principal outstanding at 31 March 1973	<hr/> 3,391,188



## APPENDIX No. 9B

EXPENDITURE ON FISHERIES FOR THE YEAR 1 APRIL  
1972 TO 31 MARCH 1973

(all figures rounded to nearest £100).

## 1. SEA FISHERIES

By (a) Department of Agriculture and Fisheries (Fisheries Division)

	£	£
(i) Development ... ..	77,200	
(ii) Fishery School ... ..	59,800	
(iii) Fishery Harbours and other Marine Works ... ..	574,300	
	<hr/>	711,300
(b) An Bord Iascaigh Mhara		
(i) Administration and Current Development (grant in aid) ...	535,000	
(ii) Capital Development (grant in aid) ... ..	715,000	
(iii) Repayable Advances* (mainly for boats and gear) ...	915,000	
(iv) Repayment of Advances written off ... ..	300,000	
	<hr/>	2,465,000
(c) Roinn na Gaeltachta Grants for marine works ... ..		82,800

## 2. INLAND FISHERIES

By (a) Department of Agriculture and Fisheries (Fisheries Division) Development ... ..	302,500
(b) The Inland Fisheries Trust Incorporated (grant in aid) ... ..	300,000
(c) The Salmon Research Trust of Ireland Incorporated (grant in aid) ... ..	5,000

## 3. DEPARTMENT OF AGRICULTURE AND FISHERIES

Salaries, Wages and other administrative Expenses for Fisheries Division ... ..	240,300
Total ... ..	4,106,900

\*A Statement of Account in respect of Repayable Advances is given in Appendix 9A.

## APPENDIX No. 10

COASTAL EXTENT OF FISHERY DISTRICTS AND NAMES  
OF THE PRINCIPAL RIVERS IN EACH DISTRICT

District	Coastal Extent of District	Principal Rivers
No. 1 Dublin	Most easterly point on Red Island, Skerries, to Wicklow Head.	Liffey Vartry.
No. 2 Wexford	Wicklow Head to Kiln Bay, east of Bannow Bay, Co. Wexford.	Slaney Avoca.
No. 3 Waterford	Kiln Bay, east of Bannow Bay, to Helvick Head, Co. Waterford.	Suir Barrow Nore.
No. 4 Lismore	Helvick Head to Ballycotton Pier, Co. Cork.	Blackwater, Funcheon, Bride, Awbeg.
No. 5 Cork	Ballycotton Pier to Crow Head, Co. Cork.	Lee, Owenboy, Bandon, Argideen, Ilen, Mealagh, Owvane, Coomhola, Glengarraf, Adrigole.
No. 7 Kerry	Crow Head, Co. Cork, to Kerry Head, Co. Kerry.	Roughty, Sheen, Finnihy, Blackwater, Sneem, Laune, Fiesk, Maine, Caragh, Currane, Cummeragh, Inny.
No. 8 Limerick	Kerry Head, Co. Kerry, to Hag's Head, Co. Clare.	Shannon, Deel, Fergus, Mulcair, Little and Upper Brosna, Inny, Maigne, Feale.
No. 9 <sup>1</sup> Galway	Hag's Head to the sea point of the boundary between the townlands of Keeraunagark South and Banraghbaun South, Co. Galway.	Corrib, Claregalway.
No. 9 <sup>2</sup> Connemara	The sea point of the boundary between the townlands of Keeraunagark South and Banraghbaun South, Co. Galway, to Slyne Head, Co. Galway.	Ballinahinch, Recess, Cashla, Owengowla, Invermore, Inverbeg, Screebe, Furnace.
No. 10 <sup>1</sup> Ballinakill	Slyne Head to Pigeon Point, Westport Bay, Co. Mayo.	Culfin, Errif, Bunn-dorragha, Dawros, Carrowniskey, Bunn-owen (Louisburgh).
No. 10 <sup>2</sup> Bangor	Pigeon Point to Benwee Head, Co. Mayo.	Newport, Burrishoole, Owenduff, Owengarve, Owenmore, Glenamoy.
No. 11 Ballina	Benwee Head to Coonamore Point, Co. Sligo.	Moy, Cloonaghmore (Palmerston), Easkey.

District	Coastal Extent of District	Principal Rivers
No. 12 Sligo	Coonamore Point to Carrickgarve, Co. Sligo.	Ballisodare, Garavogue (Sligo), Bonet, Drumcliff.
No. 13 Ballyshannon	Carrickgarve to Rossan Point, Co. Donegal.	Erne, Bundrowes, Bunduff, Eske, Eaney Water, Oily, Glen.
No. 14 <sup>1</sup> Letterkenny	Rossan Point to Malin Head, Co. Donegal.	Owenea, Gweebarra, Gweedore (Crolly), Clady, Lackagh, Lennon, Crana.
No. 17 <sup>2</sup> Dundalk	Carlingford Lough to Clogherhead, Co. Louth.	Fane, Dee, Glyde.
No. 17 <sup>1</sup> Drogheda	Clogherhead to the most easterly point on Red Island, Skerries, Co. Dublin.	Boyne, Blackwater, Deel.

**Note**—The area comprised in the former No. 14<sup>2</sup> or Moville District was, by the Foyle Fisheries Act, 1952, incorporated in the Foyle Area which is administered by the Foyle Fisheries Commission.

## APPENDIX No. 11

Quantity and Value of all Salmon and Sea Trout taken in 1971, 1972 and 1973 by Instruments of Capture.

## SALMON

	1973	1972	1971	1973	1972	1971
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	3,995,193	3,690,111	3,292,819	2,297,236	2,140,266	1,317,127
Total for rod and line	206,408	187,739	133,568	118,685	108,889	53,427
Total for drift nets	2,625,760	2,347,055	1,651,140	1,509,812	1,361,292	660,456
Total for draft nets	912,853	899,911	1,178,829	524,890	521,949	471,531
Total for stake nets, weirs, etc.	250,172	255,406	329,282	143,849	148,136	131,713

## SEA TROUT

	1973	1972	1971	1973	1972	1971
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	73,292	71,684	87,872	35,180	35,842	33,390
Total for rod and line	35,608	40,559	54,379	17,091	20,280	20,663
Total for drift nets	14,640	5,123	3,515	7,028	2,561	1,336
Total for draft nets	23,044	24,738	29,771	11,061	12,369	11,312
Total for stake nets, weirs, etc.	—	1,264	207	—	632	79

This Appendix does not include returns from the former Merville District.

## APPENDIX No. 12

Quantity and Value of Salmon taken in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Dublin	R	2,324	3,987	2,773	1,336	2,313	1,109
	N	3,767	3,550	7,193	2,166	2,059	2,877
Wexford	R	4,593	4,027	2,247	2,641	2,336	899
	N	16,064	17,374	16,755	9,237	10,077	6,702
Waterford	R	25,552	26,425	11,283	14,692	15,327	4,513
	N	568,648	590,833	349,710	326,973	342,683	139,884
Lismore	R	5,243	7,899	5,693	3,015	4,581	2,277
	N	258,964	351,822	264,515	148,904	204,057	105,806
Cork	R	6,728	9,478	9,198	3,869	5,497	3,679
	N	353,160	356,784	187,380	203,067	206,935	74,952
Kerry	R	19,854	14,418	13,088	11,416	8,363	5,235
	N	175,134	216,576	318,091	100,702	125,614	127,237
Limerick	R	35,254	28,631	24,416	20,271	16,606	9,767
	N	440,000	292,861	473,741	253,000	169,859	189,497
Galway	R	6,625	8,270	2,400	3,809	4,797	960
	N	98,203	71,894	87,939	56,467	41,699	35,175
Connemara	R	4,267	3,978	3,492	2,454	2,307	1,397
	N	29,132	30,012	8,718	16,751	17,407	3,487
Ballinakill	R	8,154	3,828	6,008	4,689	2,220	2,403
	N	39,813	35,105	22,030	22,892	20,361	8,812
Bangor	R	13,772	11,864	9,608	7,919	6,881	3,843
	N	224,584	101,484	103,558	129,136	58,861	41,423
Ballina	R	36,797	33,709	14,800	21,158	19,551	5,920
	N	654,286	563,746	356,082	376,214	326,973	142,433
Sligo	R	5,414	4,572	4,624	3,113	2,652	1,850
	N	40,999	33,245	52,869	23,574	19,282	21,148
Ballyshannon	R	3,594	2,873	3,273	2,067	1,666	1,309
	N	191,954	154,345	256,182	110,374	89,520	102,472
Letterkenny	R	18,645	12,928	15,292	10,721	7,498	6,117
	N	591,558	562,313	567,038	340,146	326,142	226,815
Dundalk	R	2,233	2,133	1,680	1,284	1,237	672
	N	51,833	47,810	28,279	29,803	27,730	11,312
Drogheda	R	7,359	8,719	3,693	4,231	5,057	1,477
	N	50,686	72,618	59,171	29,144	42,118	23,668
TOTALS	...	3,995,193	3,690,111	3,292,819	2,297,236	2,140,266	1,317,127

\* R indicates capture by means of single rod and line;  
N by means of nets, weirs, etc.

## APPENDIX No. 13

Quantity and Value of Sea Trout taken in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Dublin	R	580	1,854	1,665	278	927	633
	N	9,815	6,289	5,605	4,712	3,144	2,130
Wexford	R	1,596	1,206	1,957	766	603	744
	N	3,925	3,658	2,247	1,884	1,829	854
Waterford	R	1,436	624	1,547	689	312	588
	N	90	241	181	44	121	69
Lismore	R	448	875	1,179	215	438	448
	N	4,956	880	1,888	2,379	440	717
Cork	R	3,064	3,518	3,466	1,471	1,759	1,317
	N	2,994	888	1,250	1,437	444	475
Kerry	R	3,753	3,885	8,072	1,801	1,943	3,067
	N	598	1,185	1,185	287	592	450
Limerick	R	3,978	3,923	7,082	1,909	1,961	2,691
	N	8,725	7,419	11,998	4,188	3,709	4,559
Galway	R	1,512	636	909	726	318	345
	N	34	1,045	72	17	523	27
Connemara	R	5,000	7,204	8,555	2,400	3,602	3,251
	N	756	—	—	363	—	—
Ballinakill	R	1,300	1,401	3,945	624	700	1,499
	N	393	141	214	189	71	81
Bangor	R	2,853	6,188	1,948	1,369	3,094	740
	N	600	2,833	400	288	1,416	152
Ballina	R	2,427	2,053	1,976	1,165	1,026	751
	N	391	61	500	188	31	190
Sligo	R	500	319	600	240	160	228
	N	32	121	300	15	61	114
Ballyshannon	R	350	338	995	168	169	378
	N	1,465	847	633	703	423	241
Letterkenny	R	1,358	2,036	3,724	652	1,018	1,415
	N	2,163	2,142	3,400	1,038	1,071	1,292
Dundalk	R	1,033	2,876	3,638	495	1,438	1,382
	N	746	750	1,500	358	375	570
Drogheda	R	4,421	1,623	3,121	2,122	812	1,186
	N	—	2,625	2,120	—	1,312	806
TOTALS	...	73,292	71,684	87,872	35,180	35,842	33,390

\* R indicates capture by means of single rod and line;  
N by means of nets, weirs, etc.

## APPENDIX No. 14

Quantity and Value of Eels taken in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	Quantity			Value		
	1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Wexford ...	—	29,181	17,902	—	11,672	5,013
Waterford ...	5,008	1,486	3,378	3,255	594	946
Limerick ...	88,697	17,721	68,631	57,653	7,088	19,217
Galway ...	75,502	53,217	60,759	49,076	21,287	17,013
Bangor ...	—	1,282	—	—	513	—
Ballina ...	336	2,350	21,226	218	940	5,943
Sligo ...	9,780	450	4,789	6,357	180	1,341
Ballyshannon	13,448	3,371	12,291	8,741	1,348	3,441
Letterkenny ...	500	—	—	325	—	—
Duodalk ...	2,868	112	3,238	1,864	45	907
Drogheda ...	3,097	1,123	13,214	2,013	449	3,700
TOTALS ...	199,236	110,293	205,428	129,502	44,116	57,521

Note—The catch figures set out above are based on returns which are not complete. This explains any apparent inconsistency between the figures and the official export figures in any particular year.

## APPENDIX No. 15

Total Quantity and Value of Salmon, Sea Trout and Eels taken by all Engines in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	Total Weight for District			Total Value for District		
	1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Dublin ...	16,486	15,680	17,236	8,492	8,443	6,749
Wexford ...	26,178	55,446	41,108	14,528	26,517	14,212
Waterford ...	600,734	619,609	366,099	359,612	359,037	146,000
Lismore ...	269,611	361,476	273,275	154,513	209,516	109,248
Cork ...	365,946	370,668	201,294	209,844	214,635	80,423
Kerry ...	199,339	236,064	340,436	114,206	136,512	135,989
Limerick ...	576,654	350,555	585,868	337,021	199,223	225,731
Galway ...	181,876	135,062	152,079	110,095	68,624	53,520
Connemara ...	39,155	41,194	20,765	21,968	23,316	8,135
Ballinakill ...	49,660	40,475	32,197	28,394	23,352	12,795
Bangor ...	241,809	123,651	115,514	138,712	70,765	46,158
Ballina ...	694,237	601,919	394,584	398,943	348,521	155,237
Sligo ...	56,725	38,707	63,182	33,293	22,335	24,681
Ballyshannon	210,811	161,774	273,374	122,053	93,126	107,841
Letterkenny ...	614,224	579,419	589,454	352,876	335,729	235,639
Dundalk ...	58,713	53,681	38,335	33,804	30,825	14,843
Drogheda ...	62,466	86,708	81,319	37,510	49,748	30,837
TOTALS ...	4,264,624	3,872,088	3,586,119	2,475,864	2,220,224	1,408,038



## APPENDIX No. 16

Number, Quantity and Value of Salmon taken by Single Rod and Line  
in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value		
	1973	1972	1971	1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Dublin ...	260	409	427	2,324	3,987	2,773	1,336	2,313	1,109
Wexford ...	507	401	327	4,593	4,027	2,247	2,641	2,336	899
Waterford ...	2,934	3,154	1,472	25,552	26,425	11,283	14,692	15,327	4,513
Lismore ...	752	991	784	5,243	7,899	5,693	3,015	4,581	2,277
Cork ...	877	1,081	1,305	6,728	9,478	9,198	3,869	5,497	3,679
Kerry ...	2,593	1,670	1,636	19,854	14,418	13,088	11,416	8,363	5,235
Limerick ...	3,930	3,770	2,724	35,254	28,631	24,416	20,271	16,606	9,767
Galway ...	832	1,034	300	6,625	8,270	2,400	3,809	4,797	960
Connemara ...	608	550	566	4,267	3,978	3,492	2,453	2,307	1,397
Ballinakill ...	923	638	751	8,154	3,828	6,008	4,689	2,220	2,403
Bangor ...	1,703	1,662	1,201	13,772	11,864	9,608	7,919	6,881	3,843
Ballina ...	5,062	4,362	1,850	36,797	33,709	14,800	21,158	19,551	5,920
Sligo ...	670	618	537	5,414	4,572	4,624	3,113	2,652	1,850
Ballyshannon	446	346	462	3,594	2,873	3,273	2,067	1,666	1,309
Letterkenny ...	2,412	1,607	2,121	18,645	12,928	15,292	10,721	7,498	6,117
Dundalk ...	225	203	154	2,233	2,133	1,680	1,284	1,237	672
Drogheda ...	690	752	346	7,359	8,719	3,693	4,231	5,057	1,477
TOTALS ...	25,424	23,748	16,963	206,408	187,739	133,563	118,684	108,889	53,427

## APPENDIX No. 17

Number, Quantity and Value of Sea Trout taken by Single Rod and Line in 1971, 1972 and 1973 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value		
	1973	1972	1971	1973 lb.	1972 lb.	1971 lb.	1973 £	1972 £	1971 £
Dublin	422	2,020	1,510	580	1,854	1,665	278	927	633
Wexford	1,898	1,629	2,446	1,596	1,206	1,957	766	603	744
Waterford	1,420	560	1,031	1,436	624	1,547	689	312	588
Lismore	477	765	935	448	875	1,179	215	438	448
Cork	3,161	4,409	3,018	3,064	3,518	3,466	1,471	1,759	1,317
Kerry	3,396	3,158	5,956	3,753	3,835	8,072	1,801	1,943	3,067
Limerick	4,657	4,022	6,438	3,978	3,923	7,082	1,909	1,961	2,691
Galway	1,781	704	758	1,512	636	909	726	318	345
Connemara	3,413	5,232	8,559	5,000	7,204	8,555	2,400	3,602	3,251
Ballinakill	1,000	1,868	4,455	1,300	1,401	3,945	624	700	1,499
Bangor	3,151	3,571	2,048	2,853	6,188	1,948	1,369	3,094	740
Ballina	2,189	1,631	1,529	2,427	2,053	1,976	1,165	1,026	751
Sligo	425	189	307	500	319	600	240	160	228
Ballyshannon	300	283	814	350	338	995	168	169	378
Letterkenny	1,386	2,310	2,483	1,358	2,036	3,724	652	1,018	1,415
Dundalk	1,110	2,586	2,425	1,032	2,876	3,638	495	1,438	1,382
Drogheda	2,512	1,750	2,726	4,421	1,623	3,121	2,122	812	1,186
TOTALS	32,698	36,687	47,438	35,608	40,559	54,379	17,091	20,280	20,663

## APPENDIX No. 18

PARTICULARS OF RECEIPTS AND EXPENDITURE BY BOARDS OF CONSERVATORS  
FOR THE YEAR ENDED 30th SEPTEMBER, 1973

Fishery District	Opening Balance	RECEIPTS					EXPENDITURE					Closing Balance
		Licence Duty	Fishery Rate	Grant from Department	Misc. Receipts	Total Receipts	Salaries	Water Keepers	Legal Costs	Traveling and Misc.	Total Expenditure	
	£	£	£	£	£	£	£	£	£	£	£	£
Dundalk	+ 161	885	694	9,250	127	10,956	1,670	4,818	1,308	2,449	10,245	+ 872
Drogheda	- 501	1,853	3,294	7,250	420	12,817	1,852	6,596	—	3,952	12,400	- 84
Dublin	+ 168	1,934	486	6,750	949	10,119	2,471	3,900	—	3,087	9,458	+ 829
Wexford	+ 411	1,469	2,757	4,450	58	8,734	1,808	4,607	35	1,988	8,438	+ 707
Waterford	+ 1,585	4,054	3,107	23,250	746	31,157	3,823	18,953	8,024	7,249	38,049	+ 5,307
Lismore	- 352	1,359	8,742	11,250	269	21,620	2,449	14,642	—	4,692	21,784	- 515
Cork	- 1,612	2,577	1,159	20,250	1,092	25,078	1,741	16,993	179	7,042	25,955	- 2,489
Kerry	+ 322	3,203	4,846	12,750	1,484	22,283	1,633	16,092	3	6,032	23,760	+ 1,155
Limerick	+ 334	6,350	8,087	18,750	901	34,088	4,107	20,424	256	9,384	34,171	+ 251
Galway	+ 5,384	1,350	6,615	3,500	6,184	17,649	1,792	7,466	606	6,094	15,958	+ 7,075
Connemara	- 848	588	4,277	3,000	7	7,872	2,481	4,115	7	1,322	7,925	- 901
Ballinakill	+ 1,245	804	2,032	3,500	28	6,364	1,420	4,967	—	1,629	8,016	+ 407
Bangor	- 371	1,730	2,950	6,750	3,296	14,726	1,468	8,455	44	3,869	13,836	+ 519
Ballina	- 649	2,578	7,286	4,000	422	14,286	1,742	9,002	29	2,582	13,355	- 282
Sligo	+ 286	749	3,091	3,350	79	7,269	1,563	4,065	67	1,900	7,595	+ 40
Ballyshannon	+ 449	1,054	1,422	5,750	5,133	13,359	1,889	8,468	6	2,571	12,934	+ 874
Letterkenny	- 5,624	4,291	5,453	13,750	1,472	24,966	3,623	14,622	61	6,005	24,311	- 4,970
TOTALS	+ 388	36,828	66,298	157,550	22,667	283,343	37,532	168,185	10,625	71,847	288,189	- 4,459

APPENDIX No. 19  
PARTICULARS OF LICENCES ISSUED BY BOARDS OF CONSERVATORS FOR THE YEAR 1973

Fishery District	Annual (all districts)	Annual (district of issue)	Late Season (all districts)	Twenty-one day (all districts)	Seven day (all districts)	Late season (district of issue)	Foyle Area (one district)	Foyle Area (all districts)	Special Local Licences (Tidal Waters)	Drift net	Pole net	Bag net	Stake net	Head Weir	Box or Crib	Loop net	Snap net	Gap, Eye or Basket for eels	Long line for eels	Oyster Dredge	Fel Trap
Dublin	364	32	46	—	63	22	—	18	—	11	18	—	—	—	—	—	—	—	—	—	—
Wexford	100	153	—	—	60	111	—	—	—	76	218	—	—	—	—	—	—	—	—	—	—
Waterford	160	701	2	—	27	30	—	—	—	14	101	—	—	—	—	—	—	—	—	—	—
Lismore	84	135	27	—	106	—	—	—	—	7	182	—	—	—	—	—	—	—	—	—	—
Cork	267	218	17	—	160	111	—	—	—	54	9	—	—	—	—	—	—	—	—	—	—
Kerry	192	304	14	4	935	197	—	—	—	83	9	—	—	—	—	—	—	—	—	—	—
Limerick	336	1,064	25	—	155	343	—	—	—	128	78	—	—	—	—	—	—	—	—	—	—
Galway	106	56	37	—	164	17	—	—	—	11	38	—	—	—	—	—	—	—	—	—	—
Connemara	8	10	4	—	244	86	—	—	—	—	30	—	—	—	—	—	—	—	—	—	—
Ballinakill	21	8	14	1	270	79	—	—	—	20	47	—	—	—	—	—	—	—	—	—	—
Bangor	65	43	15	—	303	113	—	—	—	13	25	—	—	—	—	—	—	—	—	—	—
Ballina	93	317	31	—	473	90	—	—	—	11	108	—	—	—	—	—	—	—	—	—	—
Sligo	69	95	15	—	44	13	—	—	—	4	11	—	—	—	—	—	—	—	—	—	—
Ballyshannon	39	50	6	—	109	42	—	—	—	104	35	—	—	—	—	—	—	—	—	—	—
Letterkenny	161	586	14	—	315	166	7	2	—	64	212	—	—	—	—	—	—	—	—	—	—
Drogheda	230	108	36	—	71	71	49	17	—	15	—	—	—	—	—	—	—	—	—	—	—
Dundalk	62	68	8	—	1	89	—	4	—	61	—	—	—	—	—	—	—	—	—	—	—
TOTALS	2,357	3,948	311	5	3,489	1,580	6	41	31	47	713	1,112	6	9	1	31	32	145	29	145	15

## APPENDIX No. 20

## Licence Duties Payable on Fishing Engines.

	£
On each Salmon Rod—Annual (valid all districts) ...	4.00
Do. Salmon Rod—Late Season (valid all districts) ...	3.00
Do. Salmon Rod—Twenty-one day (valid all districts) ...	3.00
Do. Salmon Rod—Seven day (valid all districts) ...	1.00
Do. Salmon Rod—Annual (valid district of issue only) ...	3.00
Do. Salmon Rod—Late Season (valid district of issue only) ...	2.00
Do. Salmon Rod—Foyle area extension (valid all districts) ...	2.50
Do. Salmon Rod—Foyle area extension (valid district of issue only) ...	1.50
On each Draft net ...	4.00
Do. Drift net ...	3.00
Do. Snap net ...	2.50
Do. Bag net ...	10.00
Do. Stake net ...	30.00
Do. Head Weir ...	6.00
Do. Box or Crib ...	10.00
Do. Pole net ...	2.00
Do. Loop net ...	0.50
Do. Gap, Eye, Basket or Coghill Net for Eels ...	2.00
Do. Long line for Eels ...	2.00
Do. Oyster fishing engine ...	2.00

## LICENCE DUTIES PAYABLE ON FISHING ENGINES OTHER THAN THOSE MENTIONED ABOVE.

Fishery District	Fyke Net (provisional rates)	Eel Trap	Special Local Licences	
			Rod	Draft Net
	£	£	£	£
1. Dublin ...	0.25	—	—	—
2. Wexford ...	0.25	2.00	—	—
3. Waterford ...	0.25	—	—	—
7. Kerry ...	0.25	—	—	—
9 <sup>1</sup> . Galway ...	2.00	2.00	—	—
10 <sup>2</sup> . Bangor ...	—	—	§3.00	§25.00
13. Ballyshannon ...	—	—	—	*40.00
14 <sup>1</sup> . Letterkenny ...	—	—	—	†20.00
			†3.00	†12.50
17 <sup>1</sup> . Drogheda ...	—	2.00	—	—
17 <sup>2</sup> . Dundalk ...	—	2.00	—	—

‡ River Lackagh Tidal Waters.

\* River Erne Tidal Waters.

† River Owenea Tidal Waters.

§ Owenmore/Owenduff Tidal Waters.

## APPENDIX No. 21

## PARTICULARS OF PUBLIC INQUIRIES HELD DURING 1973

Date of Inquiry	Where held	Subject Matter	Decision on Report of Inquiry
6 June, 1973	Tralee, Co. Kerry	Application by Tralee Bay Shellfish Co-Operative, The Spa, Fenit, Co. Kerry, for Oyster Fishery Order.	Under consideration.
19 December, 1973	Dundalk, Co. Louth	Inquiry into the Bye-Laws controlling salmon fish- ing by commercial methods in the Dundalk Fishery District including the several close seasons involved.	Decision still pending.

## APPENDIX No. 22

ABSTRACT OF STATUTORY INSTRUMENTS MADE IN 1973  
GENERAL

a. European Communities (Sea Fisheries) Regulations, 1973 (S.I. No. 1 of 1973) dated 1 January 1973,

**Implementing** Articles No. 100 and 101 of the Accession Treaty to the European Economic Community.

b. Fishery Products (Regulation of Export) Order 1973 (S.I. No. 10 of 1973) dated 15 January 1973,

**Prohibiting** the export save under licence of certain frozen fishery products.

c. Fish Disease (Control of Imports) Order 1973 (S.I. No. 18 of 1973) dated 24 January 1973,

**Providing** a health control on imports of dead freshwater fish.

d. Shellfish (Regulation of Export) (Revocation) Order 1973 (S.I. No. 25 of 1973) dated 29 January 1973,

**Removing** restrictions on the export of unprocessed shellfish.

e. Fish (Regulation of Import) Order 1973 (S.I. No. 26 of 1973) dated 29 January 1973,

**Removing** quantitative restrictions on imports of fish other than trout and carp from countries outside the EEC.

f. Demersal Fish (Handling, Storage and Transport) Regulations 1973 (S.I. No. 27 of 1973) dated 29 January 1973,

**Bringing** the grading weights of certain species of fish into line with EEC regulations.

g. Fisheries (Delegation of Ministerial Functions) Order 1973 (S.I. No. 93 of 1973) dated 6 April 1973,

**Delegating** to the Parliamentary Secretary to the Minister for Agriculture and Fisheries the specified powers and duties of the Minister in relation to Fisheries.

h. Control of Fishing for Salmon (Amendment), Order 1973 (S.I. No. 108 of 1973) dated 30 April 1973.

**Providing** for the issue of salmon net licences in public fisheries to certain persons who held such licences in any of the years from 1968 to 1972.

i. Transfer of Live Roach, Bye-Law No. 561, 1973 dated 23 May 1973,

**Prohibiting** the transfer for any purpose whatsoever of live roach from any waters to any other waters.

j. European Communities (Fishery Limits) Regulation 1973 (S.I. No. 127 of 1973) dated 21 May 1973,

**Implementing** Articles No. 100 and 101 of the Accession Treaty to the European Economic Community.

k. Fishery Products (Regulation of Export) (No. 2) Order 1973 (S.I. No. 218 of 1973) dated 17 July 1973,

**Prohibiting** save under licence, the export of (a) preserved cooked mussel meat and (b) marinated herring fillets.

l. Control of Fishing for Salmon Order 1973 (S.I. No. 330 of 1973) dated 13 December 1973,

**Limiting** the number of Salmon fishing licences for fishing engines, other than rod and line, for use in public and private fisheries in all waters other than fresh water lakes and the fresh water portions of rivers, and

**Extending** the weekly close time in private fisheries and **Revoking** (a) S.I. No. 82 of 1972, (b) S.I. No. 298 of 1972 and (c) S.I. No. 108 of 1973.

m. Fishery Nets (Regulation of Mesh) Amendment Order 1973 (S.I. No. 338 of 1973),

**Extending** to 31 December 1975, the period during which any net covered by Article 5 of S.I. No. 231 of 1965 may be used in certain areas of the Irish Sea.

## LOCAL

a. Waterford District Close Season Bye-Law No. CS 119, 1973 dated 2 January 1973,

**Prescribing** the close season for salmon fishing in the Waterford District, and

**Revoking** the Waterford District Close Season Bye-Law No. CS 117 of 1970.

b. Ballyshannon District Bye-Law No. 560, 1973 dated 8 May 1973,

**Prohibiting** fishing for salmon or trout by any engine other than rod and line in the tidal waters of the River Erne and the Abbey River upstream of the mouth of the River Erne during the period from 10 May 1973 to the commencement of the Annual Close Season.

c. Sligo District Bye-Law No. 562, 1973 dated 13 June 1973,

**Prohibiting** the use of gaffs in the Drumcliffe River.

d. Control of Fishing for Salmon and Trout (Temporary Restriction) Bye-Law No. 563, 1973 dated 19 June 1973,

**Prohibiting** fishing for salmon or trout by any engine other than rod and line in specified areas and during specified periods.

e. Ballyshannon District Bye-Law No. 564, 1973 dated 3 August 1973.

**Revoking** Ballyshannon District Bye-Law No. 560, 1973.

f. Cork Board of Conservators (Dissolution) Order 1973 (S.I. No. 281 of 1973) dated 5 October 1973,

**Dissolving** the No. 5 or Cork Fishery District Board of Conservators and transferring the funds, books, property, powers, duties and liabilities of the said Board to Mr. Garrett E. Byrne, Inland Fisheries Division, Department of Agriculture and Fisheries.

g. Control of Fishing for Salmon (Alteration of Weekly Close Time) Bye-Law No. 565, 1973 dated 13 December 1973,

**Altering** the weekly close time in the fresh water portions of specified rivers in specified Fishery Districts.

## FOYLE AREA

Regulations made by the Foyle Fisheries Commission with the approval of the Minister for Agriculture and Fisheries and the Ministry of Agriculture of Northern Ireland.

Foyle Area (Weekly Close Time) (River Roe) Regulations 1973 dated 14 June 1973,

**Altering** the Weekly Close Time in the tidal waters of the River Roe.



## APPENDIX No. 23

## OUTPUT AND DISPOSAL OF FISH HATCHERY PRODUCE 1972/73

Hatchery	Output (Ova)			Disposal	River System Stocked
	Salmon (,000)	Sea Trout (,000)	Brown Trout (,000)	(,000)	
Parteen ...	1,255			229 Unfed fry 647 Fingerlings 106 Smolts	River Shannon and Tributaries
Carrig- adrohid	313			258 { Fingerlings Smolts	Rivers Lee, Bride and Shournagh
Fanure ...			800	306 Summerlings 533 Fingerlings 119 Spring yearlings 31 Autumn year- lings 10 Adults	Various Trust waters in Co.'s Longford, Monaghan, Meath, Westmeath, Sligo, Offaly, Cork, Kerry and Clare and sales to angling interests.
Mullingar			1,215	218 Ova 286 Fry 50 Summerlings 378 Fingerlings 150 Spring yearlings 30 Autumn year- lings	(180,000 Ova sold to E.S.B.)  Various Trust waters in Co.'s Longford, Westmeath, Cavan, Roscommon and Sligo and sales to angling interests.
Mallow	550			550	River Blackwater and Tributaries.
Screebe	375	10		125 Salmon 100 " 20 " 25 "  35 " 10 " 10 " 50 " 10 Sea Trout	Feale/Cashen Comeragh Ballisodare Irish Trout Indus- tries, Wooden- bridge Owenglen Inver Crumlin Retained for Screebe Crumlin

Hatchery	Output (Ova)			Disposal	River System Stocked
	Salmon (,000)	Sea Trout (,000)	Brown Trout (,000)	(,000)	
Cong ...	115			60 40 12 3	Moy Waters of Bangor Board Cong and Clare- Galway B.I.M.
Glenties ...	764			120 10 40 25 20 30 200 10 309	Waterford Board Falcarragh Ballisodare Teelin Buncrana Bantry Rivers Erne Glen Glenties System
Burrishoole Fishery No. I. (operated by Salmon Research Trust)	62			For Research Purposes.	
Burrishoole Fishery No. II.	458			150 100 75 75 58	Galway Board Foyle Fisheries Commission River Maigue Trustees Dublin Board Ballina Board
Virginia ...	220			220	River Boyne System
Carrow- more Lake Incubating Unit ...	230			150    80	To Cong for rearing to under yearling stage for restock- ing the Owenmore system and Spring fish rivers.  To Virginia for rear- ing to under year- ling stage for re- stocking the River Slaney and tribu- taries.

## APPENDIX No. 24

## SCIENTIFIC AND OTHER PAPERS, 1973

## 1 DEPARTMENTAL

## A. IRISH FISHERIES INVESTIGATIONS

a. *Series A* (Freshwater)

No. 11. J. J. Bracken and D. A. Murray. Insect emergency data from four small lakes in the South and South-West of Ireland.

No. 12. J. J. Bracken. The age and growth of pike *Esox lucius* from four Irish trout rivers.

No. 13. C. Moriarty. Studies of the eel, *Anguilla anguilla* in Ireland. In Lough Conn, Lough Gill and north Cavan lakes.

b. *Series B* (Marine)

No. 8. M. Kennedy, P. Fitzmaurice and T. Champ. Pelagic eggs of fishes taken on the Irish coast.

No. 9. G. B. Crapp. The distribution and abundance of animals and plants on the rocky shores of Bantry Bay.

No. 10. Michael D. Guiry. The marine algal flora of Bantry Bay, Co. Cork.

## B FISHERY LEAFLETS

No. 46. M. J. Crowley. Shellfish survey of Castlemaine Harbour (Cromane).

No. 49. F. A. Gibson and C. B. Duggan. American hard-shelled clam experiments in Irish waters.

No. 50. A. E. J. Went. Supplement to *List of Irish Fishes*.

No. 51. Anon. List of Fishery Leaflets Nos. 1 (1938) to 50 (1973).

No. 52. F. A. Gibson. Catch and effort in the Lobster Fishery during 1971.

No. 53. M. J. Crowley. Preliminary survey of *Littorina littorea* (Perriwinkle) on the South coast of Ireland.

No. 54. A. E. J. Went. Sea trout in the River Argideen.

No. 55. J. Molloy. Herring fisheries on the South and South-West coast 1972/73.

No. 56. T. D. Kennedy. Herring fisheries on the North-West and West coasts 1972/73.

No. 57. F. A. Gibson. Lobster trap census 1972.

No. 58. A. E. J. Went. Interesting recaptures of tagged salmon in 1973.

## 2. OTHER PUBLICATIONS

J. P. Hillis. Studies of the larval biology of *Nephrops norvegicus*. *Proc. Challenger Soc.* IV. Part 3.

————— Sea-birds scavenging at the trawler in the Irish Sea, 1971-1972. *Irish Naturalists' Journal* 17, 416-418

C. Moriarty. A study of *Austropotamobius pallipes* in Ireland in *Freshwater crayfish*, papers from the First International Symposium on freshwater crayfish, Austria, 1972, (Lund, 1973).

————— A technique for examining eel otoliths. *J. Fish. Biol.* (1973), 5, 193-184.

————— Distribution of freshwater macroinvertebrates in Ireland, 1967-1972. *Irish Naturalists' Journal* 17, 409-412.

A. E. J. Went. Salmon of the Rivers Roe and Finn (1972). *21 Rep. Foyle Fish. Com.* (1973). App. IV. 43-47.

- 
- The Pentelow Lecture. "Coarse fish in Ireland and their investigation". *Proc. Sixth British Coarse Fish Con.* Liverpool, 1973.
- 
- Some interesting fishes taken in Irish waters in 1972. *Irish Naturalists' Journal* 17, 375-379.
- 
- Movements of salmon *Salmo salar* (L) to and from Irish waters. *J. Fish. Biol.* (1973), 5, 659-671.
- 
- Seventy years agrowing. *Rapport et Proces Verbaux* 165, Copenhagen, 1972.

